

ANNUAL REPORTS
OF THE
PRESIDENT AND TREASURER
OF
HARVARD COLLEGE.
1881-82.



CAMBRIDGE:
UNIVERSITY PRESS: JOHN WILSON AND SON.

Earning and Labor.

LIBRARY

OF THE

University of Illinois.

CLASS.

BOOK.


VOLUME.

C

H26uC

1881/8

Accession No.



Digitized by the Internet Archive
in 2012 with funding from
University of Illinois Urbana-Champaign

<http://archive.org/details/annualrepor8182harv>

ANNUAL REPORTS
OF THE
PRESIDENT AND TREASURER
OF
HARVARD COLLEGE.
1881-82.



CAMBRIDGE:
UNIVERSITY PRESS: JOHN WILSON AND SON.
1882.

PRESIDENT'S REPORT FOR 1881-82.

TO THE BOARD OF OVERSEERS :—

The President of the University has the honor to submit the following Report for the academic year 1881-82; namely, from September 29, 1881, to September 28, 1882:—

By the sudden death of Thomas Buckminster Curtis, A.B., M.D., on the 12th of December, 1881, the University lost a highly valued instructor and the community a learned, skilful, and humane physician, whose large acquirements and resources were always at the service of others.

Mr. Ko kun-hua, Instructor in Chinese, died of pneumonia on the 14th of February, 1882, after a brief sickness, leaving a wife and six young children in a peculiarly helpless and desolate condition. He had been in the employ of the University since September 1, 1879, under a three years' contract made with him in China by the late Francis P. Knight, on behalf of the President and Fellows; so that his term of service had nearly expired, and he was looking forward to a return within a few months to his native land. He was a refined, scholarly, and conscientious man, punctilious in every observance and diligent in every duty, — a heathen gentleman who could have taught many a Christian how to live worthily and suffer patiently. His family were sent back to Shanghai by the University, and a private subscription was raised in Cambridge and Boston sufficient in amount to secure them against want until the children should be grown up and educated.

RESIGNATIONS.

- GEORGE MINOT GARLAND, Assistant in Clinical Medicine, October 10, 1881.
SUMNER BURRITT STILES, Proctor, October 10, 1881.
HENRY GILMAN NICHOLS, Proctor, October 10, 1881.
WILLIAM AMOS BANCROFT, Proctor, October 10, 1881.
GEORGE RIDDLE, Instructor in Elocution, October 10, 1881.
ANDREW STILLMAN WAITT, Superintendent of Buildings, January 9, 1882.
JOHN CHENEY THURSTON, Auditor of the Dining Association, March 27, 1882.
CHARLES SEDGWICK MINOT, Instructor in Oral Anatomy and Pathology, April 10, 1882.
HOWARD MALCOLM TICKNOR, Instructor in Elocution, May 29, 1882.
JOHN ROBINSON, Assistant at the Arboretum, May 29, 1882.
LUTHER DIMMOCK SHEPARD, Professor of Operative Dentistry, May 29, 1882.
HENRY JACOB BIGELOW, Professor of Surgery, May 29, 1882.
HENRY HARRIS AUBREY BEACH, Demonstrator of Anatomy, June 26, 1882.
THOMAS WATERMAN, Assistant in Anatomy, June 26, 1882.
CHARLES FRANKLIN DUNBAR, Dean of the College Faculty, June 28, 1882.
FRANCIS BARTON GUMMERE, Instructor in English, September 1, 1882.
FRANK WILLIAM TAUSSIG, Secretary to the President, September 1, 1882.
HENRY NATHAN WHEELER, Instructor in Mathematics, September 26, 1882.
WILLIAM HARLOW MELVILLE, Proctor, September 26, 1882.
GEORGE FRANCIS ARNOLD, Assistant in the Library, September 26, 1882.
ARTHUR PERCY CUSHING, Proctor, September 26, 1882.

Mr. Andrew S. Waitt, Superintendent of Buildings, resigned his charge on account of ill-health, on the completion of his twenty-eighth year of continuous service, a service which was always faithful, zealous, and prudent.

Dr. L. D. Shepard resigned the Professorship of Operative Dentistry because the proper discharge of his duties as professor interfered to an unreasonable degree with his private practice. As Dr. Shepard had given the Dental School fourteen years of almost gratuitous service, eleven as assistant professor and three as professor, and the School had not the means of paying him a suitable salary, the Corporation could not but yield to his wish to retire.

The resignation of Professor Henry J. Bigelow, after a service of thirty-three years as Professor of Surgery, was an event of grave interest for the Medical School and the

whole University. A discoverer and inventor of world-wide reputation, a brilliant surgical operator, a clear and forcible lecturer, a keen debater, and a natural leader of men by force of activity, ingenuity, and originality, Dr. Bigelow was from the beginning to the end of his connection with the Medical School a very influential member of the Faculty. His energy and sagacity contributed greatly to the rapid growth of the School between 1858 and 1870. During the discussions of 1870-71 in the Medical Faculty and the governing boards, — discussions which resulted in important changes of the general plan and policy of the School, — his part was that of a strenuous, uncompromising, and indefatigable opponent of the new projects; but the caution and moderation which his opposition induced the majority of the Medical Faculty to practise, doubtless made the measures which they finally recommended to the governing boards all the wiser, and therefore the surer to succeed. Dr. Bigelow continued to labor in the School with unabated interest and vigor for ten years after the adoption of the plans which he had opposed. In recognition of his eminent services to the University and the public, Dr. Bigelow was chosen in May last Emeritus Professor of Surgery, and the degree of Doctor of Laws was conferred upon him at the last Commencement.

On the 28th of June, 1882, Professor Dunbar resigned the laborious office of Dean of the College Faculty, the duties of which he had discharged with great acceptance for six years and a half in addition to his duties as Professor of Political Economy. In his official dealings with the students he was keen-sighted, quiet, patient, kind, and just; in his relations with the instructors he exhibited a prudence and a good judgment which commanded their entire confidence. The Faculty was diligently engaged, during his whole administration, in improving its methods of discipline, instruction, and examination, and developing

the elective system of studies, as may clearly be seen in the six admirable reports which he prepared between the years 1876 and 1881. The fundamental principle which guided the labors of the Dean and Faculty is well expressed in the following sentence from the Dean's Report for the year 1879-80: "In the revision of the regulations, as well as in the system of elective study, the Faculty have had constantly in view the purpose of encouraging young men when approaching their majority to act upon their own responsibility, and to learn to make a considerate and profitable use of that full liberty of action which they are so soon to enjoy." The two gentlemen who have successively held the office of Dean since its first establishment in 1870 have set for their successors a high standard of dignity, wisdom, and efficiency.

APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

OLIVER WENDELL HOLMES, JR., to be Professor of Law, January 23, 1882.
EPHRAIM EMERTON, to be Winn Professor of Ecclesiastical History, January 23, 1882.

FREDERICK IRVING KNIGHT, to be Assistant Professor of Laryngology for five years from September 1, 1882, February 13, 1882.

WILLIAM LAMBERT RICHARDSON, to be Assistant Professor in Obstetrics for five years from September 1, 1882, February 13, 1882.

CHARLES BURNHAM PORTER, to be Assistant Professor in Surgery for five years from September 1, 1882, February 13, 1882.

JOHN COLLINS WARREN, to be Assistant Professor in Surgery for five years from September 1, 1882, February 13, 1882.

CLEMENT LAWRENCE SMITH, to be Dean of the College Faculty, February 27, 1882.

HENRY JACOB BIGELOW, to be Emeritus Professor of Surgery, May 29, 1882.

CHARLES FOLLEN FOLSOM, to be Assistant Professor of Mental Diseases for five years from September 1, 1882, June 12, 1882.

WILLIAM HENRY BAKER, to be Assistant Professor of Gynaecology for five years from September 1, 1882, June 12, 1882.

JOHN WILLIAMS WHITE, to be Assistant Professor of Greek for five years from September 1, 1882, June 12, 1882.

DAVID GORDON LYON, to be Hollis Professor of Divinity, June 26, 1882.

DAVID WILLIAMS CHEEVER, to be Professor of Surgery, June 26, 1882.

WILLIAM AUGUSTUS ROGERS, to be Assistant Professor of Astronomy for five years from April 9, 1882, June 26, 1882.

CHARLES PARKER LYMAN, to be Professor of Veterinary Science, June 28, 1882.

EDWARD STEVENS SHELDON, to be Instructor in Modern Languages, October 10, 1881.

SERENO WATSON, to be Curator of the Herbarium and Instructor in Phytography, November 28, 1881.

EDWIN HERBERT HALL, to be Instructor in Physics, June 12, 1882.

BENJAMIN OSGOOD PEIRCE, to be Instructor in Mathematics, June 12, 1882.

CHARLES EDWARD FAXON, to be Assistant in the Arboretum, from June 1, 1882, May 29, 1882.

WARREN ANDREW LOCKE, to be Organist and Choir-master, June 26, 1882.

JOHN CHENEY THURSTON, to be Auditor of the Harvard Dining Association, October 31, 1881.

LYMAN BEECHER FISK, to be Auditor of the Harvard Dining Association from April 1, 1882, March 27, 1882.

[FOR ONE YEAR OR LESS.]

For 1881-82.

HENRY GROSVENOR CAREY, to be Instructor in Vocal Music, October 10, 1881.

CHARLES EDWARD FAXON, to be Instructor in Botany, October 10, 1881.

BENJAMIN MARSTON WATSON, to be Instructor in Horticulture, October 10, 1881.

EDWARD BURGESS, to be Instructor in Entomology, October 10, 1881.

HENRY JOHN DIXON JONES, to be Instructor in Elocution, October 10, 1881.

THOMAS SERGEANT PERRY, to be University Lecturer upon English Literature, October 31, 1881.

GRENVILLE STANLEY HALL, to be University Lecturer on Pedagogy, December 12, 1881.

ALEXANDER MCKENZIE, to be Lecturer on Biblical Theology, January 9, 1882.

FRANCIS AMASA WALKER, to be University Lecturer on the Resources of the United States, January 9, 1882.

TIMOTHY OTIS LOVELAND, to be Clinical Instructor in the Dental School, October 10, 1881.

CHARLES WILSON, to be Clinical Instructor in the Dental School, October 10, 1881.

ALBERT BENTON JEWELL, to be Clinical Instructor in the Dental School, October 10, 1881.

EDWIN PERLEY BRADBURY, to be Clinical Instructor in the Dental School, October 10, 1881.

EUGENE HANES SMITH, to be Clinical Instructor in the Dental School, October 10, 1881.

EDWARD CORNELIUS BRIGGS, to be Clinical Instructor in the Dental School, October 10, 1881.

LESTER SACKETT FORD, to be Demonstrator in Zoölogy, October 10, 1881.

FRANCIS BOOTT GREENOUGH, to be Clinical Instructor in Syphilis, January 9, 1882.

GEORGE MINOT GARLAND, to be Assistant in Clinical Medicine, October 10, 1881.

EDWARD HICKLING BRADFORD, to be Assistant in Clinical Surgery, October 10, 1881.

JOSEPH WEATHERHEAD WARREN, to be Assistant in Physiology, November 14, 1881.

For 1882-83.

JAMES LAURENCE LAUGHLIN, to be Instructor in Political Economy, March 13, 1882.

FRANK WILLIAM TAUSSIG, to be Instructor in Political Economy, March 13, 1882.

LOUIS DEMBITZ BRANDEIS, to be Instructor in Evidence, April 10, 1882.

JOSIAH ROYCE, to be Instructor in Philosophy, May 29, 1882.

FREEMAN SNOW, to be Instructor in Forensics and History, June 12, 1882.

FRANCIS BARTON GUMMERE, to be Instructor in English, June 12, 1882.

HENRY JOHN DIXON JONES, to be Instructor in Elocution, June 12, 1882.

BROOKS ADAMS, to be Lecturer on Constitutional Law, June 21, 1882.

HENRY HOWLAND, to be Instructor in Torts, June 26, 1882.

EDWARD SOUTHWORTH HAWES, to be Instructor in Greek and Latin, September 26, 1882.

LEONARD PARKER KINNICUTT, to be Assistant in Chemistry, June 26, 1882.

CHARLES FREDERIC MABERY, to be Assistant in Chemistry, June 26, 1882.

HAROLD WHITING, to be Assistant in Physics, June 26, 1882.

HENRY CHAMPION JONES, to be Assistant in Botany, June 26, 1882.

GEORGE WILLIAM PERKINS, to be Assistant in Biology, June 26, 1882.

EDWARD KNIGHT STEVENS, to be Assistant in Organic Chemistry, June 26, 1882.

JOHN HOMANS, to be Clinical Instructor in the Diagnosis and Treatment of Ovarian Tumors, June 12, 1882.

FRANCIS BOOTT GREENOUGH, to be Clinical Instructor in Syphilis, June 12, 1882.

OLIVER FAIRFIELD WADSWORTH, to be Clinical Instructor in Ophthalmoscopy, June 12, 1882.

SAMUEL GILBERT WEBBER, to be Clinical Instructor in Diseases of the Nervous System, June 12, 1882.

CLARENCE JOHN BLAKE, to be Clinical Instructor in Otology, June 12, 1882.

- JOHN ORNE GREEN, to be Clinical Instructor in Otology, June 12, 1882.
AMOS LAWRENCE MASON, to be Clinical Instructor in Auscultation, June 12, 1882.
JAMES READ CHADWICK, to be Clinical Instructor in Diseases of Women, June 12, 1882.
JAMES JACKSON PUTNAM, to be Clinical Instructor in Diseases of the Nervous System, June 12, 1882.
JOSEPH PEARSON OLIVER, to be Clinical Instructor in Diseases of Children, June 12, 1882.
FREDERICK CHEEVER SHATTUCK, to be Clinical Instructor in Auscultation, June 12, 1882.
THOMAS MORGAN ROTCH, to be Clinical Instructor in Diseases of Children, June 12, 1882.
FRANK WINTHROP DRAPER, to be Lecturer on Forensic Medicine, June 12, 1882.
CHARLES SEDGWICK MINOT, to be Lecturer on Embryology, June 12, 1882.
EDWARD NEWTON WHITTIER, to be Instructor in the Theory and Practice of Physic, June 12, 1882.
WILLIAM PALMER BOLLES, to be Instructor in Materia Medica, June 12, 1882.
FRANCIS AUGUSTINE HARRIS, to be Demonstrator of Medico-Legal Examinations, June 12, 1882.
MAURICE HOWE RICHARDSON, to be Demonstrator of Anatomy, June 12, 1882.
JOSEPH WEATHERHEAD WARREN, to be Instructor in Oral Pathology and Anatomy, June 26, 1882.
ABNER POST, to be Clinical Instructor in Syphilis, June 26, 1882.
TIMOTHY OTIS LOVELAND, to be Clinical Instructor in the Dental School, September 26, 1882.
CHARLES WILSON, to be Clinical Instructor in the Dental School, September 26, 1882.
ALBERT BENTON JEWELL, to be Clinical Instructor in the Dental School, September 26, 1882.
EDWIN PERLEY BRADBURY, to be Clinical Instructor in the Dental School, September 26, 1882.
EUGENE HANES SMITH, to be Clinical Instructor in the Dental School, September 26, 1882.
EDWARD CORNELIUS BRIGGS, to be Clinical Instructor in the Dental School, September 26, 1882.
GEORGE FRANKLIN GRANT, to be Demonstrator in Mechanical Dentistry, September 26, 1882.
VIRGIL CLARENCE POND, to be Demonstrator in Operative Dentistry, September 26, 1882.
-
- HENRY PARKER QUINCY, to be Assistant in Histology, June 12, 1882.
EDWARD HICKLING BRADFORD, to be Assistant in Clinical Surgery, June 12, 1882.
WILLIAM STURGIS BIGELOW, to be Assistant in Surgery, June 12, 1882.

FRANCIS HENRY DAVENPORT, to be Assistant in Gynaecology, June 12, 1882.
GEORGE MINOT GARLAND, to be Assistant in Clinical Medicine, June 12, 1882.

JOSEPH WEATHERHEAD WARREN, to be Assistant in Physiology, June 12, 1882.

WILLIAM CARROLL EMERSON, to be Assistant in Chemistry, June 12, 1882.

WILLIAM WHITWORTH GANNETT, to be Assistant in Pathological Anatomy, June 12, 1882.

WALTER JOSEPH OTIS, to be Assistant in Anatomy, June 12, 1882.

SAMUEL JASON MIXTER, to be Assistant in Anatomy, June 12, 1882.

CHARLES ELLIOTT ST. JOHN, to be Proctor in the Divinity School, June 12, 1882.

ARTHUR ANDERSON BROOKS, to be Librarian in the Divinity School, June 12, 1882.

JOHN CHENEY THURSTON, to be Auditor of the Dining Association, October 31, 1881.

FREDERICK BRADFORD KNAPP, to be Superintendent of Buildings for one year from April 24, 1882, April 24, 1882.

At the beginning of the year 1881-82 twelve graduates of other colleges were admitted to the Senior and Junior classes in Harvard College; and at the beginning of the current year thirteen graduates of other institutions were admitted to the Senior, Junior, and Sophomore classes. These twenty-five persons came from nineteen different institutions scattered over the country from Maine to South Carolina, and from Nova Scotia to Iowa. They were admitted without formal examinations upon the conditions which were thought equitable in each case, after careful inquiry into each applicant's previous course of study, and his standing and reputation at the institution from which he came. A standing committee of the Faculty conducts these inquiries, and upon their report the Faculty decides each case by itself. The Faculty is glad to admit to the College good scholars who have graduated, or studied long, at other institutions; but they regard a general rule of admitting *ad eundem* as out of the question, because of the great diversity among the hundreds of institutions which confer the degree of bachelor of arts, and

they believe that the method of admission above described is practicable, equitable, and as liberal as a due regard to the standard of the Harvard degree will permit. This practice of entering Harvard College as a candidate for the bachelor's degree after having graduated at another institution may be said to be a recent one, although not unknown before 1881 ; but there is good reason for it in the variety and range of the instruction here offered, and in many of the cases which have presented themselves since the beginning of the year 1881-82, the student has acted on the advice of officers of the institution with which he was first connected. The practice may therefore prove a growing one, and Harvard College will certainly welcome all such opportunities of co-operating with other institutions.

The College Faculty adopted, after discussions which extended over parts of two years, an important change of policy and practice in regard to the anticipation of studies of the Freshman year by means of examinations passed at the times of the admission examinations. Heretofore, a candidate for admission who passed some of these optional examinations got but little advancement, and gained but little freedom thereby, unless he passed enough of them to be admitted to the Sophomore class. The preparatory schools had small inducement, therefore, to carry their pupils beyond the bare requisitions for admission ; unless they could cover the whole work of the Freshman year, and so present candidates for admission to the Sophomore class. The new regulations, in the first place, facilitate the shortening of the College course to three years in individual cases, by providing explicitly that a candidate who has passed a creditable examination for admission to the Freshman class, and moreover passes examinations upon three fifths of the Freshman work, may of right join the Sophomore class, upon condition of making up the remaining two fifths during his three years in College ; and

by further providing that a candidate who has anticipated less than three fifths, but still a substantial portion of the Freshman work, may ask of the Faculty leave to fulfil the requirements for the degree in three years, specifying in his application the manner in which he proposes to arrange his studies for that purpose. The Faculty will decide upon such applications according to the circumstances of each case. Secondly, the new regulations give greater freedom in his work to a student who, besides passing a creditable examination for admission, has anticipated Freshman studies; for they provide that the work required of him in College as a candidate for the bachelor's degree shall be reduced by the amount of the studies anticipated, provided that the reduction shall not exceed the amount of one full course of study (three or two hours of attendance per week) in any year.

These new regulations are addressed to ambitious students who are quick to learn, and who have something to gain by doing at school the whole, or a good part, of the work of the Freshman year. The possible gains are various. A year may be saved on the course which leads to the degree of bachelor of arts, to be spent in ampler professional study, or in obtaining the degree of master of arts. Robust young men, whose resources are limited, may save the expense of one year at Cambridge by doing extra work at school and in college. On the other hand, the student who has no need to economize, and is quite free to spend four years in college, by anticipating some of the Freshman studies can get more time for the studies of his choice. It is a gain to have accomplished all the prescribed studies in the whole course for the degree of bachelor of arts before entering the College; for then the freedom of study, which is proper to college life as distinguished from school life, begins with the beginning of residence at the College. The Freshman year is in important respects a mere continuation of school life; for its studies are required, and

they are the same studies which have been pursued for several years at school, — namely, Latin, Greek, mathematics, and physics, with the addition of the elements of either French or German, and twenty lectures on chemistry. Moreover, in that year the instructor and the willing student are both more hampered by the presence of the unwilling; and the work is seldom found by ambitious students to be as enjoyable and profitable as the work of the subsequent years.

There is good reason to think that capable and ambitious boys could, by the time they were eighteen years and a half old, easily accomplish at good schools the greater part of the work of the Freshman year, in addition to the subjects embraced in the regular examination for admission to the Freshman class. They could then, under the new regulations, obtain the degree of bachelor of arts at the average age of twenty-one and a half, instead of twenty-two and a half, as at present; so that a year would be saved to be devoted to professional training, or to advanced study in preparation for teaching or other learned calling. Under the new rule in regard to the master's degree, which opens courses given in professional schools to candidates for that degree, a young man who proposes ultimately to go into business as a trader or manufacturer will be able to use with great advantage a year saved on the long course which leads to the bachelor's degree, for the study of political science and the elements of law.

It is hardly necessary to point out that these new regulations tend to exalt the function of the secondary schools. Without having received much encouragement from the College, the schools have already begun to present some of their best pupils in more than the two elective groups required for admission. For three years past, from ten to twelve per cent of the candidates for admission have offered more than the two groups required. (See pp. 57, 58.) A few young men are also fitted each year for the Sopho-

more class ; but there is no secondary school in the country which systematically provides instruction in all the subjects which are taught in the Freshman year. Here, then, are comparatively new fields to be cultivated by zealous masters of secondary schools and their most ambitious pupils. The examinations on Freshman studies will hereafter be held in June as well as in September, in order that candidates who are ready in June may not be obliged to carry on their studies through the long vacation.

As the result of several debates and conferences within the past two years, considerable changes have been made in the statements of the requisitions for admission to the following colleges : Harvard, Yale, Brown University, Dartmouth, Williams, Trinity, Amherst, Wesleyan University, Tufts, and Boston University. The object in view was to make the requisitions of these different institutions the same, on paper at least, for all common subjects ; and this object has been measurably accomplished, so that the work of a school which is required to prepare boys in the same classes for several of these colleges has been much facilitated. The same quantities of the same authors in Greek, Latin, and English, the same topics in arithmetic, the same amounts of algebra and geometry, and the same descriptions of what is required as to reading Greek and Latin at sight, will be found in the official statements of the requisitions for admission at all the above-mentioned institutions, with some exceptions in the single case of Yale College. At several of the colleges, however, there is an older, and perhaps easier, set of admission requisitions which is maintained as an alternative. Some of these colleges, moreover, require candidates to offer subjects which are not demanded at the others ; and no attempt has been made to bring all the colleges even approximately to the same standard in conducting examinations on the same paper requisitions. In spite, however, of all the diversities which remain, the degree of uniformity which has been

secured by the negotiations of the past two years is a gain for the secondary schools, and therefore for the colleges as a whole. In conformity with the agreements made on this subject, some slight changes in the requisitions for admission to Harvard College went into effect in 1882. They are described in full in the Dean's Report, p. 56.

The number of special students in the College continues to increase. The Faculty has by gradual steps finally admitted them to all the privileges of undergraduates, except that of winning a degree and consequently gaining admission to the quinquennial catalogue, and has brought them in all respects under the same discipline to which other members of the College are subjected. They may study anything which is taught in the University; they are ranked with other students upon the published rank-lists; and they may win "honors" if they can. (See the Dean's Report, pp. 73, 74.) No scholarships or other beneficiary aids are at present open to them; and this exclusion from beneficiary aid is a loss not only to them but to the College. Many young Americans who possess native force of mind and character grow to manhood under circumstances of poverty or isolation which cut them off from all chance of getting the regular training in Greek, Latin, and mathematics which would have fitted them to pass the College admission examinations at the average age; but they have had irregular opportunities of getting instruction, which they have improved to the utmost; they have read eagerly, and they have intellectual ambition and a keen desire for education. In the wide range of instruction which the University offers, such students find many courses which they are well able to follow, though at first, perhaps, under disadvantages which their zeal and capacity for work soon enable them to overcome; and they are sure to distinguish themselves as scholars if they can find the means of living at the University, under conditions which permit them to put their strength

into study. One such student is worth more than scores of youth who have had from childhood up all possible educational advantages, but who have got from them neither power of application, nor a rational ambition, nor any interest in intellectual things. It was observation of the quality of some special students which induced the Faculty gradually to remove the restrictions originally (1876) placed on the admission of this class of students. To see a special student, who upon coming to Cambridge was entirely unable to pass the examinations for admission to the Freshman class, within three years getting the maximum mark in the most advanced courses in Greek and metaphysics which the University provides, is a convincing argument in favor of making hospitable provision for special students in general. The best special students have generally been poor young men, who would always have been excellent candidates for scholarships, and who immediately got such aid whenever, as has repeatedly happened, they were transferred from the class of special students to one of the regular classes of the College. What wise universities most desire is the opportunity of educating young men of uncommon parts; so that restrictions must necessarily be unwelcome which prevent them from applying their beneficiary endowments to the use and furtherance of such young men whencesoever they appear, — whether candidates for degrees or not, whether of regular or irregular previous training, — provided only that they be competent and eager students.

Late in the year the Faculty appointed a committee to consider and report upon the general subject of out-of-door athletic contests, and particularly upon the regulation of match games of ball. It was the elaborateness of the arrangements for match games of base-ball, and the frequency of those contests in April, May, and June which prompted this action on the part of the Faculty; but the inquiry at once took a wide range, and comprehended all the com-

petitive athletic sports. The committee examined the existing methods of maintaining and conducting these sports, and conferred with a number of graduates and undergraduates who were specially interested in them. Before Commencement they reported that a standing committee of the Faculty ought to be appointed to regulate athletic sports, and that the President be requested to ascertain if Yale, Brown, Dartmouth, Princeton, and Amherst (the institutions whose students are represented in the Collegiate Base-ball League) would unite with Harvard in prohibiting games with professional clubs. The Faculty adopted both of these recommendations. A standing committee of three was appointed to regulate athletic sports; and the Faculty thus assumed for the first time a direct responsibility for the character and extent of those exercises. The correspondence of the President with the other colleges above-mentioned was not concluded until October, when it appeared that all the Faculties except that of Yale College would be glad to unite in prohibiting base-ball games with professional clubs.

Since the beginning of the current year, the standing committee of the Faculty have made regulations which forbid Collège clubs to play or compete with professional clubs, and provide that, after the current year, no student shall belong to a boat crew unless he can swim, and that no student shall engage in any athletic contest until he has been examined and pronounced fit by the Director of the Gymnasium. The committee have also denied to professional "trainers" access to the grounds and buildings of the University, except by special permission of the committee. The influence of the committee has been successfully used to reduce the number of match games of ball, and to confine them to Saturdays. These various restrictive measures have on the whole commended themselves to the judgment of the whole body of students and graduates; for even the young men most active in athletic

sports had perceived that the college competitions were running to excess, and that the ball-games, boat-races, and some of the sports technically called athletic, were in danger of losing that amateur quality which should always characterize the bodily exercises and sports of young men who are in training for intellectual pursuits, and for modes of life in which satisfaction and power of usefulness come, not from great muscular strength or special skill in any sport or exercise, but rather from a well-proportioned bodily development and good general health. When games are made a business, they lose a large part of their charm; and college sports cannot approach the professional standard of excellence without claiming the almost exclusive attention of the players, and becoming too severe, monotonous, and exacting to be thoroughly enjoyable. The most devoted college athletes have repeatedly rebelled against what they thought too strict or too prolonged training. Moreover, a high standard of excellence tends to make the number of persons who actually take part in athletic sports very small, the considerable number of tolerably good players being driven from the field, and reduced to the unprofitable position of mere lookers-on.

Many people take it for granted that the students who are conspicuous in athletic sports are capable of nothing better, and stand as a rule at the bottom of the College rank lists. This is by no means the case. Of the eighty-four different students who were members of the University crew, base-ball nine, or foot-ball eleven from 1873 to 1881, more than a quarter stood above the middle of their respective classes, and the average standing of the whole number was represented by seventy-two in a supposed class of one hundred. It may be said, moreover, for some of the very lowest scholars among the athletes, that the perseverance, resolution, and self-denial necessary to success in athletic sports turn out to be qualities valuable in business and other active occupations of after life, even

when they are associated with lack of interest in scholarly pursuits or with dulness or slowness of mind. In making this investigation, it was noticed that the base-ball players had on the average a lower rank than the rest (seventy-six in a supposed class of one hundred), the probable explanation being that the base-ball campaign occurs in April, May, and June, absorbing much time at the period of the annual examinations.

In the recent conferences between the committee of the Faculty and the students and graduates interested in athletic sports, and in the general discussion of the subject throughout the University, very little difference of opinion has been exhibited as to what is desirable in the conduct of these sports. It is agreed on all hands that the increased attention given to physical exercise and athletic sports within the past twenty-five years has been, on the whole, of great advantage to the University; that the average physique of the mass of students has been sensibly improved, the discipline of the College been made easier and more effective, the work of many zealous students been done with greater safety, and the ideal student been transformed from a stooping, weak, and sickly youth into one well-formed, robust, and healthy. It is also agreed that athletic competitions, though necessary to the maintenance of a proper interest in the general subject, may easily run into excess, and on that account need to be kept within discreet limits; and that the whole spirit of College sports and contests should be that of amateurs who are amusing themselves, and not that of professional players who are earning a living, and seeking a reputation for its pecuniary value.

The new arrangement for the conduct of morning prayers, which was described in the last Report, worked well throughout the year 1881-82, and has been continued during the current year. The order of the service is as follows: A psalm is read responsively by the minister

and the congregation, and is followed by singing by a choir of students; the minister then reads a passage from the Bible, and offers a prayer; the Lord's prayer is then said by the minister and the congregation together; next a hymn is sung, and the service ends with a benediction, the choir singing the Amen. The organ is played while the students are coming in and going out. The service begins at a quarter before nine, and is limited in duration to about twelve minutes, inasmuch as lectures begin at nine o'clock. Many students enter heartily into the service; the choir is composed partly of paid members and partly of volunteers; and the officiating ministers for the year are the ministers who happen to be officially connected with the University, as members of the Corporation, the Board of Overseers, or some Faculty. In 1881-82 these ministers belonged to four different denominations; during the current year they represent but three; for three of them are Orthodox Congregationalists, two are Baptists, and three are Unitarians. The service is impressive, edifying, and interesting, and he who can attend it for years without sometimes being touched by it and moved to better living, must be a very insensible and earth-bound person. Twice within a few years the College Faculty has represented to the Corporation that attendance at prayers ought in their judgment to be made voluntary; but the Corporation has declined to take action upon the subject. In the autumn of 1881 a motion made in the Board of Overseers, that the statutes ought to be altered so that attendance at prayers might be voluntary, was rejected by a large majority.

During the year under review, the Plummer Professorship being vacant, the Sunday morning services in Appleton Chapel were conducted by ministers of different denominations, who were selected by a committee of the Academic Council. In May last the Corporation directed that the Sunday service be held during the year 1882-83 in the evening instead of the morning, and only from the

middle of October till the spring recess, the preachers being selected as before by a committee of the Council. These evening services are open to the public as well as to members of the University. The changes made since September, 1881, in the services at morning prayers and on Sundays having rendered the music a more important element than it was before, the Corporation found it expedient to appoint an organist and choir-master; and they were fortunate in securing for this new position Mr. Warren A. Locke, a graduate of the College, a skilful musician, and an experienced teacher.

It has been one result of the recent changes in the conduct of the College chapel, that the church, which was organized in 1814, upon the completion of the chapel in University Hall, as a distinct religious body within the University, has ceased to exist. The Corporation have felt for several years that there were serious objections to making official provision in Appleton Chapel for a religious body which had affiliations with only one sect, and for the accommodation on Sundays of a portion only, and that a diminishing portion, of the University officers.

Last spring the College Faculty and the Academic Council agreed that the distinction which had been maintained since 1877 between graduate and undergraduate courses of instruction should be abolished, and that the courses in the same general subject, like Greek or physics, should be arranged in one series, so that all the instruction offered by the University in each subject should be visible at a glance. As a matter of fact, while the distinction was maintained, the courses in any one department formed a progressive series; graduates were constantly taking courses classed as undergraduate, and many undergraduates were admitted to courses called graduate. (See the Dean's report, pp. 67, 68.) A member of the Junior or Senior class, or a Harvard bachelor of arts or science, or a

graduate of some other college who has come to Cambridge to pursue his studies, may be prepared for the higher courses offered in one department of study, but only for the lower in another. That a course of instruction is pursued by undergraduates is no evidence that it is an inappropriate study for a Harvard bachelor who obtained his first degree upon other courses. In short, the taking of the bachelor's degree, which used to mark the completion of a liberal education, now marks only a favorite halting-place where ways intersect and divide.

To encourage graduates of this college and of other colleges to pursue their studies in the arts and sciences at the University, the Corporation and Overseers determined last summer, at the suggestion of the College Faculty, that a few of the scholarships which have heretofore been used for undergraduates might be assigned to graduate students, the award to be made to the most meritorious among those who need pecuniary aid. A cautious experiment on this subject is to be tried during the current year; but a method of opening these scholarships safely and fairly to graduates of other colleges remains to be devised.

The Academic Council gave much attention during the year 1881-82 to a discussion of the conditions on which the degree of master of arts should be conferred. For several years the standing rules of the Corporation and Overseers had provided that the master's degree might be obtained by one year of liberal study after taking the degree of bachelor of arts, or by one year of study in theology, law, or medicine, after taking the degree of bachelor of divinity, or of law, or doctor of medicine, and that the degree of doctor of philosophy should carry with it that of master of arts. All the professional Faculties felt some objection to these rules, because their language implied that professional studies were not liberal, and they made it to appear that the master's degree was superior to the professional degrees; but the Faculties of law and

medicine had special reasons for desiring some modification of them. From the time when the three years' course for the degree was instituted at the Law School, the provision for obtaining the master's degree in law by an additional year of study became inoperative, and the School ceased to derive any benefit from it. The Medical School established in 1879-80 an optional fourth year of instruction, but continued to give the degree at the end of three years' study, the Faculty hoping that the best students would remain in the School four years before taking the degree, although they could get it in three. The Harvard bachelor of arts, who had joined the Medical School, could, however, get the degree of doctor of medicine at the end of his third year, and the master's degree at the end of his fourth; and he naturally preferred to get two degrees for four years of study, rather than one only. The Harvard bachelors of arts being generally among the best students in the School, the Faculty saw that their example would be influential with other students against waiting until the end of the fourth year to take the M.D. In other words, the rules about the master's degree were for the Medical Faculty an actual obstruction in the prosecution of their plan of lengthening the course of study for the degree of doctor of medicine. The professional Faculties also urged that the degree of doctor of philosophy was really a professional degree for teachers and men of letters or science; and that there was no reason for making that degree carry with it, or include, the master's degree, which did not apply equally well to all the degrees commonly called professional.

Acting on the advice of the Council, the Corporation and Overseers rescinded the standing rule which provided for giving the degree for an additional year of professional study after graduation in theology, law, or medicine, and amended the remaining rule, so that it should read:—
“The Academic Council will recommend for the degree

of master of arts candidates otherwise properly qualified, who, after taking the bachelor's degree, shall pursue for at least one year at the University a course of liberal study approved by the Council, and shall pass with high credit an examination on that course. The Council will designate from time to time those courses of instruction in the Professional and Scientific Schools which will be approved by it for the degree of master of arts." This rule proceeds upon the assumption that some, at least, of the studies pursued in the Professional and Scientific Schools are liberal, as distinguished from technical studies; but when the Council undertook in June last to designate those professional courses of instruction which it would accept as liberal, and therefore as suitable for candidates for the master's degree, it found itself upon difficult ground; and at the opening of the current year a question of construction arose in the Council as to the time at which under the new rule a member of any professional school, already a bachelor of arts, might take the master's degree on professional studies, — whether at the end of any year of his three or four years' course in the School, or only at the end of that course. The analogy of the degree of doctor of philosophy was in favor of the view that the professional degree should carry with it the degree of master of arts, and that the two degrees should be simultaneously conferred; but the analogy was far from perfect. The Schools of Law and Medicine had each something to gain by withholding the A.M. until it could go with the LL.B. or M.D.; but some members of these Faculties doubted the justice of this method. A new debate sprang up which has not yet been brought to an issue; but it is already plain that the Council will recommend the governing boards to modify and add to the rule which they made last summer. To put the master's degree upon a thoroughly satisfactory footing, and to make it significant and useful, is well worth a long discussion; for the degree

had sunk very low in this country in consequence of the common practice of conferring it, as a matter of course, upon all bachelors of arts who paid a small fee for it three years after taking the bachelor's degree. The efforts made here since the year 1872 to place the degree upon a respectable footing have been successful in one important respect, but have failed in another. The degree has come to be regarded as good evidence that the recipient has made serious attainments in addition to those for which he received the bachelor's degree; but the number of recipients has been altogether too small. That the degree may command respect and be sought for in the future, it ought to be within the reach of, and be held by, a considerable proportion of all the highly educated men in the community. This desirable result cannot be obtained under rules which prevent the best class of professional students from winning the degree.

The following table exhibits in per cents the occupations, or professional destinations, of twelve hundred and twenty-six recent graduates, the survivors of ten classes (1867-1876), as stated in the class reports issued (with one exception) three years after the year of graduation.

	Law.	Medicine.	Theology.	Scientific.	Teaching.	Business.	Unknown & Miscellaneous.
Per cent.	36	10	5	6	9	21	13

The reports are not supposed to be perfectly accurate, and ten years after graduation the distribution of the survivors among the different occupations will not be precisely the same that it is only three years after graduation; but still the figures clearly prove that more than half of the graduates of the College go into law, medicine, theology, and the various scientific callings. It is to be observed, moreover, that the portion of each class which enters the learned and scientific professions undoubtedly embraces a very large proportion of all the men in the class who possess decided intellectual force.

For several years past there have been fire-works, bon-fires, and a great deal of noise in the College yard on the night of Commencement, the most active participants in the disturbances being generally young men who had received their degrees in the morning of the same day. There has been nothing malicious or vicious about these disorders, except that a few of the participants have usually been more or less under the influence of intoxicating drink. Very little injury has thus far been done to property, and the accidents to persons have been, with one exception, but trifling. Nevertheless the disturbance is a nuisance to the neighborhood, a source of appreciable danger to property and persons, and a periodical occasion of injurious comment and criticism, and therefore ought to be prevented. The good sense of the great majority of the class just graduated does not prove effectual to control the unthinking turbulence of a small minority, and since the principal actors are bachelors of arts, the ordinary methods of College discipline as administered by the Faculty are inapplicable. Preferring academic methods to any others, the Corporation and Overseers have agreed that they hold themselves at liberty to revoke the degree of any person who participates in these disorders, provided that his degree has just been conferred. It may be expected that this power will be exercised only in very plain cases, and rather by way of suspension than of permanent revocation.

At the instance of the Divinity Faculty, the Corporation and Overseers adopted in June last new rules on the admission of students to the Divinity School. Hereafter only bachelors of arts, or persons who have received an equivalent education, are to be admitted as candidates for the degree of bachelor of divinity, and no person who is not a bachelor of arts is to be admitted as a special student, unless he pass a satisfactory examination in some of

the Greek and Latin classics, and in the Greek of the Gospels. The twofold object of these changes is to make the degree of bachelor of divinity inaccessible except to men of thorough training; and to exclude altogether from the School young men who lack the preliminary education necessary to enable them to profit by its teachings, and keep up with its classes. It must be admitted that this regulation in regard to special students is inconsistent with the general tendency in other departments of the University to open instruction to all comers; but the Divinity School requires some special protection, because it peculiarly needs a reasonable degree of homogeneousness in its small classes, and because it is liable to be seriously discredited by the crude public performances of incompetent young preachers, who can say with truth that they are connected with the School, although it has no real responsibility for their quality. The tuition fee of the School is too low (fifty dollars a year) to afford any protection against the entrance of unsuitable persons; but, on the other hand, the total receipts from fees are so small (\$1483.35 in 1881-82) that the School has nothing to fear from such a reduction in the number of students as the new regulations are likely to cause.

The Hollis Professorship of Divinity was last filled by the Rev. Henry Ware, who resigned the chair in 1840, after a service of thirty-five years. In 1842 the Corporation separated the little fund of this professorship from the consolidated fund called "Appropriations for Professors," in which it had been long merged, and gave it a separate place in the published accounts with a value of \$3998.90. In 1844 they began to accumulate the fund, and until September 1, 1882, made no use of it. In this period of thirty-eight years it doubled three times, so that it now amounts to \$34,441.96. When Edward Wigglesworth was chosen in 1721 first Hollis Professor of Divinity, he became the first and the only professor in Harvard Col-

lege, and the statutes of the professorship assigned to him a vast range of instruction, including positive and controversial divinity, ecclesiastical history, Jewish antiquities, cases of conscience, and critical exposition of both the Old and the New Testament. But when in 1882, after this ancient chair had been vacant forty-two years, the Corporation again determined to fill it, they found that the field originally assigned to the Hollis Professor had in the meantime been divided among five professors of the University, and that in the general progress of knowledge no scholar could be expected to deal thoroughly with more than a small portion of such a field. They therefore elected to the chair Mr. David Gordon Lyon, Ph.D., a student of the Semitic languages and Assyriology, with the general purpose of reinforcing the instruction in Semitic languages, Old Testament criticism, and Jewish history, and so of strengthening the whole department of divinity or theology. After due investigation and deliberation, the Board of Overseers accepted these views, and consented to this election; and Dr. Lyon entered upon his duties at the beginning of the current year.

Thomas Hollis, of London, the founder of the professorship, was a Baptist, and in agreeing with the New England Congregationalists of 1721 upon the statutes of his professorship, he tried to prevent them from insisting on tests of orthodoxy which would have excluded Baptists from his chair. One hundred and sixty-one years after the establishment of the professorship, a member of the Baptist communion is at last elected to it.

The first election of a Winn Professor of Ecclesiastical History, a professorship endowed in 1877, took place in January, 1882, when Ephraim Emerton, Ph.D., was elected to the chair. Dr Emerton has had a thorough training in the study of history both at home and abroad, and as an instructor in history for some years past in the College proper, he has acquired valuable experience in

teaching the subject. He is a layman, and brings to the study and teaching of church history the methods used in investigating and expounding the development of other great institutions and bodies of doctrine.

The Rev. Alexander McKenzie, D.D., gave a course of twelve lectures before the School last spring on theology from an evangelical standpoint, and it is the intention of the Faculty to supplement the regular course of instruction in systematic theology by a similar course of additional lectures every year.

There are now six full professors in the Divinity Faculty against three twelve years ago. Within the same period the degree of bachelor of divinity has been instituted, annual examinations in all the studies of the School have been established, the requisitions for admission have been raised, the administration of the beneficiary funds has been placed, as in other departments of the University, upon the basis of scholarship and promise as well as need, and the general spirit of the instruction given has become to a high degree scientific and impartial. In the mean time the bonds of denominationalism have been growing visibly weaker throughout the Protestant world, and it no longer seems impossible that young men should study theology, as they do metaphysics, political economy, or zoölogy, without having committed themselves in advance to any theory, creed, or set of opinions on controverted points. Until that happy day comes, it is hardly to be hoped that the clerical profession can recover from the depressed condition into which it has fallen. The present dearth of able ministers, which is acknowledged in all Protestant denominations, will probably continue so long as young men of independent spirit and mental virility are repelled from the profession at the very threshold, as they now are. A partial remedy for this evil is likely to be found in the conduct of theological education at universities, or other centres of diversified intellectual activity, instead of in

isolated denominational seminaries, and with the same academic freedom for teacher and pupil which is allowed in other great departments of study.

There were four important events in the Law School in the year 1881-82. The construction of an elegant and spacious building for the School was begun; a new professorship was endowed with the sum of \$90,000 by an anonymous benefactor; to this professorship Mr. Oliver Wendell Holmes, Jr., was chosen; and finally a book fund was raised by subscription to the amount of \$47,000, of which \$25,230 had been paid on Sept. 1, 1882. The new building will be ready for occupation at the beginning of the next academic year, and will certainly facilitate very much the work of the School, and add greatly to the comfort of its members. These additions to the endowment of the School increase its stability and independence, and indicate, it is to be hoped, that the legal profession and the community are beginning to perceive the importance of endowing professional as well as college education. The accession of Professor Holmes to the Faculty proved to be but a short-lived advantage; for, after an auspicious service of only three months, he accepted the honorable position of a justice of the Supreme Court of Massachusetts.

The tables given in the report of the Dean (pp. 84, 85) indicate that the School has not yet recovered from the restrictive effects of the admission examination imposed in 1877-78, and of the establishment of the three years' course for the degree in the same year. The first table also indicates that the number of students in the School has been affected from year to year, not by the appointment or withdrawal of this or that professor, but by the progressive changes in the regulations of the School concerning admission, residence, and graduation, and to some extent by the changes of legislation, or of rules of court, in various

States of the Union concerning admission to the bar. The School represents a system or method of teaching law, a system which, instead of relying on the passive receptivity of the student, implants in him the spirit of investigation, teaches him how to investigate thoroughly, and cultivates to the utmost his power of independent thinking. It is a system which demands the whole time and strength of an intelligent student for three years; but in return it promises to send him out into his profession with a mental equipment which will enable him, if he possess the right mental and moral fibre, to distinguish himself at once from the mass of untrained youth who annually enter the profession only to encumber its lower ranks. The teachers who administer this system must be men who possess large and systematic knowledge of law, sound judgment, enthusiasm, and the power of clear exposition; but they need not have been eminent at the bar or on the bench. It has but seldom happened that the same man achieved eminence both in practice and as a teacher. In short, the teaching of law is a difficult and honorable profession in itself, and cannot often be combined with, or late in life taken up in exchange for, the practice of law, another absorbing profession which appeals to different motives, develops different qualities, and holds out different rewards. Thus far the Law School has taken its professors, with one exception, from the ranks of the active profession; but in the increasing difficulty of obtaining and retaining suitable professors of that sort it is a satisfaction to remember that there is another approved method of procuring law professors, — the method which the great law schools of continental Europe have long followed, and which has produced not only great teachers but great jurists. Those schools have selected young men of mark, who have shown a genius for law and a desire for the life of a teacher and student, and, having carefully tested on probationary appointments their capacity for

teaching, made them professors at an age so early that the whole vigor of their youth and prime could be thrown into teaching and authorship. The Law School has tried this method once with conspicuous success, and it may be obliged to try the method again — without, however, adopting it as a policy.

On the 26th of September, 1881, a letter was received by the President and Fellows from Marie E. Zakrzewska M.D., and nine other female physicians (see Appendix I.), asking if the President and Fellows would accept the sum of \$50,000 for the purpose of providing such medical education for women as would entitle them to the degree of doctor of medicine, the sum with its accumulations to be applied to this purpose within ten years, or returned to the donors. At the meeting of the Corporation on the 31st of October, the following action was taken, in view of the considerable change in the membership of the Board of Overseers since May, 1879, when the subject of the admission of women to the Medical School was last discussed in that Board: "Whereas the President and Fellows have been asked if they would accept a fund, the income of which shall be ultimately used for the medical education of women: Voted, to consult the Board of Overseers anew upon the expediency of the University's undertaking that function." This vote was received by the Overseers at a meeting held November 17, 1881, and was referred to a committee of five members, which at the stated meeting of January 11, 1882, presented a majority and a minority report. The majority report, signed by three members, recommended the Overseers not to advise the acceptance of such a fund; the minority report, signed by two members, recommended the Overseers to advise its acceptance. The Board adopted the minority report, and voted, — "To recommend the acceptance by the President and Fellows of a fund, the income of which shall be ultimately used for the medical education of women." (Ayes

11, noes 6). This vote of the Overseers was received by the Corporation at their meeting on January 23; but no action was taken upon the subject, because of private information that members of the minority in the Board of Overseers desired to have opportunity of bringing the matter again before the Board, and had hopes of reversing in a larger meeting the recommendation made on January 11. At a special meeting of the Overseers on the 2d of February, a member of the minority of January 11 moved "that the Corporation be respectfully requested, before taking any action under the vote of this Board, 'to recommend the acceptance by the President and Fellows of a fund, the income of which shall be ultimately used for the medical education of women,' to consult this Board in relation to such action." This motion was laid upon the table. At a special meeting of the Overseers on the 4th of March (the next meeting but one) the above motion having been taken from the table, the member who originally made it obtained the consent of the Board to modify it so that it should read, "That the President and Fellows be requested not to appropriate any money received for the purpose of giving a medical education to women without taking the advice of this Board," and then procured the postponement of the consideration of this modified motion until an adjourned meeting to be held on the 18th. In the evening of the same day (March 4) the Medical Faculty voted that a committee be appointed "to consider and report at an adjourned meeting of the Faculty in one week upon the subject of the medical education of women and its relation to this Faculty." This Committee unanimously recommended, at the adjourned meeting on March 11, that the Faculty pass the following preamble and vote: —

"Whereas the Medical Faculty of Harvard University has learned that the President and Fellows and the Board of Overseers of that Institution are considering the expe-

diency of receiving money for the medical education of women, and of granting a medical degree to women: Voted, that this Faculty protests against any action on the part of the Corporation which shall tend to provide for the medical education of women under the auspices of the University, without the advice and full concurrence of the Faculty of the Harvard Medical School."

The preamble and vote were adopted by the Faculty (ayes 14, noes 5, absent 2), and forwarded to the Corporation and Board of Overseers. The Corporation received this communication at their stated meeting of March 13, and laid it upon the table. The Overseers received it at their meeting previously appointed for the 18th. On that day the motion which was laid on the table at the meeting of March 4 was taken up, again modified by its mover with the consent of the Board, so that it was made to read, "That in the opinion of this Board it is not advisable for the University now to give any assurance, or hold out any encouragement, that it will undertake the medical education of women by Harvard College in its Medical School," and referred to a committee of three with instructions to confer with the Medical Faculty on the subject of their protest just received. At the same meeting it was also voted, "That the Corporation be requested to take no action on the letter of Dr. Zakrzewska and others, inquiring whether the College will accept the sum of \$50,000 for the medical education of women upon certain conditions, before receiving a further communication from this Board."

The last vote was received by the Corporation at their stated meeting of March 27. On the 25th of March a special meeting of the Medical Faculty was held to consider, and act upon, a communication from the chairman of a committee of the Overseers proposing a conference with the Faculty. The meeting consisted of seventeen members, five members, including the President and Dean,

being absent. The following preamble and votes were adopted :—

“Whereas the Medical Faculty believe that the President and Fellows, and the Board of Overseers are now cognizant of their desire for an opportunity to be heard before these bodies in matters relating to medical education in the University: therefore

“Voted, that the Medical Faculty hereby withdraws its protest to the President and Fellows, dated March 11, 1882, and communicated to the President and Fellows and to the Board of Overseers. (Unanimously.)

“Voted, that this Faculty hereby respectfully represents to the President and Fellows its conviction that the interests of medical education would be advanced, and the harmonious action of the University better secured than now, if the Faculty were officially assured by the President and Fellows that they deem it inexpedient to legislate in matters relating to medical education in the University without first offering to the Medical Faculty an opportunity of expressing its views. (Unanimously.)

“Voted, that if the President and Fellows have a desire to be informed of the present views of the Medical Faculty upon the question of female medical education in the University, the latter would respectfully state that in their opinion it is not advisable that the President and Fellows should open a course of medical study to women under the auspices of the University.” (Ayes 16, noes 1. Two members who voted in the affirmative desired to have it recorded that they did so on the ground that the cordial co-operation of the majority of the Faculty was necessary to success, and could not be secured.)

The meeting also appointed a committee to confer with the committee of the Overseers. The two committees having subsequently had a conference, another special meeting of the Faculty was held on the 8th of April to consider what answer should be given to a request from

the committee of the Overseers for the reasons which led the Faculty to think it inadvisable that the University should provide a course of medical study for women. The Faculty adopted a reply (see Appendix II.), the substance of which is contained in the following votes: "Voted, that the fact that the Medical Faculty is strongly adverse to undertaking female medical education would be, in their belief, of itself fatal to the success of an attempt in that direction." "Voted, that female medical education cannot be undertaken in the Medical School without a serious risk of detriment to the interests of the medical education now given to men."

At the stated meeting of the Corporation on April 10, the preamble and votes passed March 25 by the Medical Faculty were received, and in response to the representation contained in the second vote, the Corporation recorded the following resolution: "Voted, that the President and Fellows deem it inexpedient to legislate in matters relating to medical education in the University without first offering to the Medical Faculty an opportunity of expressing its views." A standing committee of two members of the Board was also appointed, with which the Medical Faculty might confer on any matters relating to medical education in the University. At the stated meeting of the Board of Overseers on April 12, a communication from the Medical Faculty, enclosing a copy of the above preamble and votes which the Faculty had adopted on the 25th of March, was received and laid upon the table. The committee appointed to confer with the Medical Faculty, to which was also referred the motion made at the meeting of March 18, on the subject of undertaking the medical education of women, reported that they did not "deem it necessary to make any recommendation either for or against this motion," and simply returned it to the Overseers for their action. The motion having been amended by striking out the word "now," it was adopted as follows: —

“Voted, that in the opinion of this Board it is not advisable for the University to give any assurance, or hold out any encouragement, that it will undertake the medical education of women by Harvard College in its Medical School.” (Ayes: the Treasurer of the University, and Messrs. Endicott, Paine, Saltonstall, Salisbury, Amory, Russell, Smith, Hodges, Parker, R. M. Morse, Lyman, and Lawrence, — 13. Noes: the President of the University, and Messrs. Brooks, Storey, Peabody, McKenzie, J. T. Morse, Clarke, Seaver, Sargent, Wyman, Kidder, Hale, — 12. Absent: Messrs. Cabot, Holmes, Fiske, Lowell, Lee, Hoar. In the chair, Mr. Codman.) At an adjourned meeting of the Board on April 27, the further consideration of the communication from the Medical Faculty, which was laid upon the table on April 12, was indefinitely postponed. The vote passed by the Board of Overseers on April 12, having been communicated to the Corporation on the 24th, the Corporation immediately took the following action: “Upon the question of accepting the proposal contained in the communication received by this Board on September 26, 1881, from Marie E. Zakrzewska, M.D., and others, in relation to the medical education of women in Harvard University, Voted, that while the President and Fellows of Harvard College recognize the importance of thorough medical education for women, they do not find themselves able to accept the proposal contained in the communication above referred to.”

Throughout this discussion the supporters of the policy of providing at the University for the education of women in medicine were placed at serious disadvantage, because the sum of money mentioned was, in the first place, inadequate, and secondly, not ready in hand, but only to be raised in case the President and Fellows consented to receive it. It is proper to add that one reason, not of a permanent character, had some influence in determining the attitude of the Medical Faculty during both the dis-

cussions of this difficult subject which have recently taken place,—the first in 1879, and the last in 1882. The Faculty felt that it had on its hands new undertakings enough, which were of uncertain issue as regards the future income of the School, and were sure to be costly during the years of experiment and transition. Thus, in 1879, the fact that they were engaged in radically changing the plan of study in the School was urged by them as a reason for not entering upon the experiment of admitting female students. Again, in April, 1882, the effort which the Faculty has been making since the beginning of the year 1880–81 to establish a fourth year of study in the School was still in its first difficult stages, and the Faculty was beginning to see that the occupation of the new building, which then gave promise of completion within a few months, was sure to occasion many new expenditures, as well as to give the School many new facilities.

The last table in the Dean's report (p. 93) brings out the fact that ninety-one per cent of the graduates of 1882 had been in the School six terms, or three years; and that only one graduate had been in the School less than two years. On going back ten years, these figures are found to be almost reversed. Of fifty-six graduates in 1872, only three had been three years in the School, and only eight more had been two years in attendance; while eighty per cent had been connected with the School only three terms or less. These figures demonstrate that ten years have wrought a great change for the better in the constitution and discipline of the School, and in the quality of the education to which its diploma testifies.

It is the endeavor of the Faculty to make the optional fourth year of study so interesting and profitable that the better class of students will feel that they cannot afford to forego it; but since no class, which has had adequate notice of the establishment of the fourth year's course, can enter upon that course until September, 1883, it is

still impossible to foresee how soon this additional effort to improve medical education will succeed. The Dean has twice pointed out in his annual reports that the Trustees of the Hospitals might greatly promote the prompt success of this much-needed improvement by indicating a preference, in selecting house-officers or assistants, for young men who have given four years to medical study over those whose systematic instruction has terminated in three.

Since September 1, 1878, the Dental School has reduced its debt by \$2076.47, maintained its standard for the degree, and gained somewhat in the number of its students. It is still burdened with a debt of \$14,488.37, and for four years past it has paid no salaries to its professors. It has never paid its clinical instructors anything, and in its best years it only paid the professors a few hundred dollars. The subscription for the benefit of the School which was started in the summer of 1881, produced \$515 up to September 1, 1882, all but one of the subscribers being dentists, and thirteen being subscribers of \$20 a year for five years. The School has given every evidence that it deserves to be placed upon a better pecuniary footing. Its standard for graduation is high, its course of study longer and more thorough than that of any other American Dental School, and its facilities excellent for giving its students practice in operating; its graduates are attached to it, have faith in it, and are ready to give both time and money, according to their means, for its maintenance. Moreover a considerable proportion of the graduates of the School during the past thirteen years (the first class graduated in 1869) have already become successful practitioners, and influential members of the profession. Among the Boston dentists of largest income are already included several of the graduates of this young School. Indeed, the School is chiefly recruited from year to year by the zeal of its graduates, and the stimulating example of

their success. They have themselves started a subscription for the endowment of the School, and have every right to urge it upon the attention of liberal persons who recognize the fact that skilful dentistry has been of great service to them or to their children, and who perceive that the dental profession is, and must continue to be, an indispensable agency for preventing pain, maintaining the power to enjoy food, preserving beauty and strength, and putting off old age. An endowment of at least \$30,000 is needed.

The Scientific School, the Botanic Garden, and the Bussey Institution, including the Arnold Arboretum, call for but brief remarks. The Dean of the Lawrence Scientific School directs attention (p. 95) to the explanation of the diminution in the number of special students in 1881–82, namely the freer opening of the College to special students. This cause is likely to continue to produce this effect. The Director of the Botanic Garden was in Europe during the year, and took occasion to study there the methods employed in gardens belonging to Universities. By the generosity of two members of the Overseers' Committee on the Garden, he was enabled to buy a considerable collection of apparatus and instruments for botanical research. During the year \$2000 were added to the Garden Fund; but this fund is still inadequate, and persons who desire to promote the study of botany, pure or applied, or to strengthen the public taste for the various forms of floriculture and arboriculture, have here the best possible opportunity to give money in furtherance of these objects.

The net income of the Bussey Trust Fund was larger by \$2267.08 than it was in 1880–81, and a further improvement of moderate amount may be looked for, as soon as certain heavy expenditures for repairs upon the stores have been completed. The number of students at the Bussey Institution remained small, but the regular instruc-

tion was maintained, and the buildings were kept in good repair. Professors Slade and Storer received a little over one fifth of their proper salaries. The Director of the Arnold Arboretum has been husbanding his resources for several years past; so that he will have at his disposal for immediate expenditure at least \$10,000, besides the ordinary income of the Arnold Fund, whenever the long-pending negotiations with the City of Boston for the use of the Arboretum as part of the City's system of parks are brought to an issue, and the planting of trees, shrubs, and herbaceous plants in a permanent arrangement can properly be begun. The report of the Director (p. 122) shows that the energy, which he has been prevented from putting forth in the Arboretum proper, has only been diverted into other productive fields.

A report from the Director of the Chemical Laboratory is for the first time appended to this Report (p. 106). The Director's statement gives a striking picture of the activity which pervades the University Laboratory, not only as a place where elementary and advanced chemistry are taught to a large number of students, but also as a place of research, where the knowledge of chemistry is constantly extended by the diligent labors of professors, assistants and students. The report of the Director is commended to the attention of any friends of the University who may have imagined that the scientific activity and productiveness of the chemical department had diminished, or was in danger of being elsewhere surpassed. It is proposed to embody in this annual Report a similar statement of the work done each year in the department of physics, as soon as this department shall have been concentrated in the new Laboratory. Indeed it is desirable that the President's Report should contain concise descriptions of the work done each year in all the scientific establishments of the University. The Botanic Garden, Museum of Com-

parative Zoölogy, Chemical Laboratory, Observatory and Arnold Arboretum being already represented in the Report, no large additions would be needed to make the representation complete.

The Library was crippled during the year 1881-82 by a reduction in its staff. Whenever the expenses of the College threaten to exceed its receipts, the Corporation turns to the Library as the best place in which to reduce expenses, because Library work can be postponed while teaching cannot. The administration and service of the Library cost about \$20,000 a year, and since they are not endowed, their annual cost falls practically upon the College tuition-fees and the unrestricted funds. The book funds produce nearly \$12,000 a year; and to order judiciously, collate, catalogue and place on shelves \$12,000 worth of books, besides cataloguing, acknowledging, and assigning to their proper places all the maps, books, pamphlets, and prints annually given to the Library, requires a large amount of skilled labor. There are thousands of books in the Library which for want of money to spend upon cataloguing, have never been entered in the public catalogue begun in 1860. The use of the Library increases from year to year, and involves an increased expenditure for service. The Bulletin and the Bibliographical Contributions issued from the Library have a permanent value for scholars, and are a credit to the University; but their publication costs labor and money, and could not be maintained were it not for the annual support given to them by a few gentlemen who are interested in such work.

In spite of all these legitimate demands for additional outlays, and in spite of the many advantages of a steady rate of expenditure, such as is needed for the maintenance of a permanent staff, the Corporation were obliged to instruct the Librarian, on the 12th of December, 1881,

to reduce the expenses of the Library fifteen hundred dollars a year below the expenses of 1880-81, and to effect this reduction as soon as agreements already entered into would permit. The reduction of expenses actually effected in 1881-82 under this vote was \$1057.31, it being impossible to secure the full reduction contemplated until the year now current. The work of the Library is seriously in arrears, and the present staff cannot bring it up. In consequence of delays at the Library in ordering books, and delays at the agencies in procuring them, the income of the book-funds has been accumulating to such an extent that \$25,000 are available for the purchase of books during the current year. It is doubtful if even this most pressing work of ordering books to that amount, and then making them ready for circulation, can be well and promptly done. What the Library greatly needs, is funds amounting to at least \$400,000, the income of which could be applied to the cost of administration and service. Its book funds are already considerable; but to keep all the books in a great library in such order that each one can be found on demand, issue large numbers of them incessantly to readers in a well warmed and lighted room, keep them all in repair, and incessantly replace thousands of them each on its shelf, costs annually a great deal more than to buy each year the few thousand books, the acquisition of which may reasonably be desired. The Eben Wright Fund of \$100,000., which will probably come into the possession of the Corporation on the 1st of January, 1884, is to be devoted to the cost of administration and service in the Library, and will give a welcome relief; but three more such funds could be well applied in the same direction.

Three points are to be noticed in the present excellent administration of the Observatory: in the first place the Director prefers large pieces of routine work, in which

some valuable results are sure to be obtained, to bits of occasional work which may perhaps possess more immediate interest, but which involve expense, and are liable to be interfered with at the critical moments by bad weather; secondly, he has devoted the Observatory, in large part, to astronomical physics, without neglecting, however, such purely astronomical work as had been already undertaken or falls in his way; thirdly, he has exerted himself, and with a good measure of success, to get all the valuable work done by his predecessors reduced and published, and he is strenuously endeavoring to reach the point of publishing current observations with no more delay than is necessary for their reduction and proper discussion. These principles of his administration must commend themselves to all intelligent friends of the Observatory; for they are economical as regards expenditure and watchful of the return for every outlay, judicious as regards the selection of a limited field to be especially cultivated, just as regards past administrations which, for lack of means, were obliged to leave whole series of interesting observations unpublished, and efficient as regards the prompt and thorough utilization of all the instruments and resources of the establishment. The long list of papers published during the year by the officers of the Observatory (see p. 117), is an index of the scientific activity which characterizes the place.

By making wise and fruitful application of the additional income which the subscription of 1878 placed at his disposition for five years, the Director and his associates have shown what good use can be made of at least \$5000 a year in addition to the income of the existing funds. Sympathy with a pure scientific ardor, respect for the labors and sacrifices of devoted men, living and dead, who have given themselves without reserve to the pursuit of astronomical science in the Cambridge Observatory, pride in the past achievements of American astronomers, and hope-

ful anticipation of future progress, all unite to further the efforts of the Overseers' Committee on the Observatory to raise this year a permanent fund of \$100,000.

The Museum of Comparative Zoölogy received very important accessions during 1881-82, among which the chief were, — a mass of fossil vertebrates, mainly mammalian, brought by Messrs. Garman and Sternberg from Wyoming, Kansas, and Texas, a large collection of insects made in Washington Territory by Dr. Hagen, an important collection of Solenhofen fossils purchased from Mr. E. Haeberlein, and an immense and very valuable collection of the Silurian fossils of Bohemia brought together by the late J. M. von Schary, and bought from his heirs. Sundry less considerable collections of fossil plants, mounted animals and skeletons, palaeozoic invertebrates, and fossil fishes, were also purchased.

The official publications of the Museum were even more numerous than those of the preceding year, consisting of eleven numbers of the Bulletin (877 pages with 32 plates), and two numbers of the Memoirs (171 pages with 14 plates); and many other publications, based upon materials belonging to the Museum, were made during the year by the Curator, the Assistants, and other specialists, in the transactions of various academies and in several scientific journals.

Good progress was made towards finishing the new corner-block of the Museum; the building was plastered, and a few of the rooms are already occupied. A large amount of work was done in clearing the exhibition rooms of material temporarily stored in them, and in arranging the systematic collections of mollusks, fishes, birds, and radiates, and the Indian, Australian, and African faunal collections.

It will not be supposed that all these things were done in 1881-82, with the year's income of the funds appropri-

ated to the Museum — namely, with about \$27,000. The collections alone, made or bought during the year, cost more than \$38,000. In 1881-82, the Curator, as in many a year preceding, took upon himself heavy charges for building, furnishing, collecting, arranging, and publishing. The great expenditure of money and labor at the Museum for nine years past has been sagaciously managed upon a far-reaching plan, the fruits of which cannot fully appear for several years to come ; but an important stage in the development of the establishment as a school of natural history will be reached next October when the new laboratories of zoölogy and geology will be ready for use.

After due consideration, and consultation with the Medical Faculty and some of the instructors at the Bussey Institution, the Corporation and Overseers established a professorship of veterinary medicine in the University ; and in the course of the summer Mr. Charles P. Lyman, a Fellow by examination of the Royal College of Veterinary Surgeons, London, was elected to the chair. Since the opening of the current academic year, a Faculty of veterinary medicine has been organized, a course of instruction covering three years has been arranged, and in September, 1883, pupils will be received. The objects which the University had in view in organizing this new department, were briefly these : To train year by year a few competent and trustworthy practitioners ; and to contribute to the progress of a branch of science which deals with many questions of public health and with great pecuniary interests.

The experiment of giving instruction in Chinese at the University was brought to a sad end by the death of Mr. Ko. The original plan provided for a five years' experiment, which would have been more hopeful than one of only three years ; but the late Mr. Francis P. Knight, who raised the original subscription in 1877, was obliged to

offer higher pay than he expected, in order to secure a competent teacher, so that the subscription was insufficient in amount for more than three years, and the contract with Mr. Ko was made for three years from September 1, 1879. As it was, the experiment cost the College \$2,954.51 (beside all that the original subscribers contributed, and beside the subscription which was raised last spring for the widow and children); and it remains to be seen whether any beneficial results will ever flow from it. One student whose attainments in Chinese were remarkable went to China, but has returned out of health. Mr. Ko's two oldest sons are more likely to profit by the experiment than any other persons; for they learned some English, and imbibed some Western ideas.

At the beginning of the year the Dining-Hall Association did not have as large a number of members as usual, and the number steadily diminished, until in February there were less than four hundred members. The price of the board during the first three months had been \$5.00 a week, and most of the poorer students had left the Hall because they could get board in the town for \$4.00 a week, or even less. The majority of the Directors had believed that it was safer to provide board acceptable to persons who were able and willing to pay \$5.00 a week, than to cut down the board, and so attempt to keep in the Hall those who did not wish to pay more than \$4.00, at the risk of dissatisfying the greater number; but the event shortly proved that the Association could not spare the large body of students who desired cheap board. Thereupon the Directors instructed the Steward to take any measures necessary to reduce the price of board, and requested the Corporation to guarantee that the price should not rise above a maximum to be specified. This request was probably made because the Corporation had given this guaranty once before for the Association, — namely, in the autumn of 1876, the only other time when the number

of members fell below 400. The difficulties of the Directors were increased by a certain distrust of the accuracy of the monthly statement of accounts which prevailed among the members of the Association. A committee of the Corporation examined the accounts, satisfied themselves that they were essentially correct, and reported to the Corporation that the price of board did not exceed \$5.00 a week for the first three months, that it was less than \$5.00 for the month of January, with a little over four hundred members in the Association, and that it was quite within the power of the Directors to keep the price below \$5.00 with three hundred and fifty members in the Hall, and to reduce the price if the numbers increased. The Corporation thereupon voted, — “That in the opinion of the Corporation it is unnecessary for them to guarantee the price of board, and that interference by the Corporation with the business of the Association is in general undesirable.” The result was, that the Directors, with the help of a large committee appointed to recruit the Association, succeeded in getting safely through the year. The numbers gradually increased, until in May the average membership was four hundred and fifty-seven; the price of board was \$5.00 a week from October to April, and \$4.54 a week for April, May, and June. The lesson that the Directors of the Association can extricate themselves from difficulties by the use of their own discretion and powers without any help from the Corporation is a wholesome one. Since it is certain that the College authorities could not carry on the Dining Hall, it is a satisfaction to have some assurance that it can be successfully carried on by the Association as now organized; for the Hall is of great service to the University.

In February last, a co-operative society was organized among the students to carry on business in fuel, books, new and second-hand, stationery, second-hand furniture, and a few other articles which students use. The society

also undertook to procure from certain Boston and Cambridge tradesmen discounts from regular prices for all its members. Nearly six hundred students joined the society. In its first ten months it has done a safe and useful business to a moderate amount, and has induced all dealers within the range of its competition to reconsider their prices. Its business is limited by the fact that it is all done for cash; for many students prefer getting credit at high prices to paying cash at low ones. The Corporation gave the society the use of the old gymnasium for one year from March 1, 1882.

The subscription of \$75,000 for the endowment of the new Physical Laboratory was made up during the past summer, and \$22,000 were paid in by September 1. The condition of the anonymous gift of \$115,000, wherewith to build a suitable laboratory, having been thus fulfilled, the Corporation set about the preparation of the plans for the building, Mr. Alexander Agassiz having general charge of the undertaking as a committee of the Corporation. The professors and instructors in the department of physics have all given careful attention to the plans, and it is confidently expected that spacious, well-arranged, and thoroughly equipped laboratories, ample cabinets, and convenient lecture-rooms will be the product of their studies. The building will probably be begun in the coming spring.

The annual appointments called University Lectureships continue to serve the good purpose of procuring from gentlemen, not otherwise connected with the University, occasional courses of valuable lectures which are open to the public, sometimes on payment of a fee, and sometimes gratuitously. In 1881-82 three such courses were given,—the first, by Mr. Thomas Sergeant Perry, on Tuesday afternoons in Sever Hall, a course of thirty lectures on English literature; the second, by G. Stanley Hall, Ph.D., on Saturday mornings in Wesleyan Hall, Boston, a course of six lec-

tures on pedagogical subjects ; and the third, by General Francis A. Walker, on Tuesday evenings in Sever Hall, a course of four lectures on American agriculture and manufactures.

Many of the College classes which have graduated within thirty years and a few of the older classes have raised a class fund, the income of which is generally used for class expenses, such as printing and circulating periodical reports and providing entertainments. Some of these funds have been lost, and others seriously impaired by injudicious investment ; nearly all of them are held in an irregular way, without any attention to legal forms, and without any specification of the uses to which they are ultimately to be applied. The aggregate of these funds is already considerable ; and during recent years each class has provided a fund, and the amount of this provision tends to increase. It would not be difficult to devise a plan for making all these funds much more secure than they now are during the life of each class, and for disposing of them in some appropriate manner as each class dies. For example, the Association of the Alumni might furnish from its officers a small body of trustees to hold class funds, to pay the income of each fund to the order of the class secretary, and to dispose of each fund by fixed rules upon the extinction of the class to which it belonged. This subject is respectfully commended to the attention of the alumni.

The measures adopted last year, and described in the last Report, for preventing the continuance of an annual deficit after the year 1881-82, answered the end in view. The deficit for 1881-82 (\$14,738.64), was not so large as was feared, and for the current year there will probably be a small surplus.

Since September 1, 1869, the expenditures for the purchase of land and the erection or reconstruction of buildings for University uses have been constant and heavy.

Including the contracts now in process of execution, and the cost of the proposed physical laboratory, and excluding all repairs and all improvements which do not amount to reconstruction, the sum total of these expenditures is not less than \$2,300,000. (For a list of items see Appendix III.). Of this amount about \$510,000 yields some income; the rest is wholly unproductive. The buildings erected within this period, including those already projected and provided for, fairly meet the present needs of the University; and in the near future a building to cost \$250,000 is to be erected from proceeds of the Hastings bequest. The attention of the friends and supporters of the University should now be turned to the increase of the quick capital, or invested funds, and especially of unrestricted funds and of funds devoted to such comprehensive purposes as salaries, retiring allowances, scholarships for undergraduates, special students, graduates, or professional students, administration and service in the Gymnasium, Chapel, Library, or Dining Hall, and the maintenance of the several scientific laboratories. There is a variety of objects, both large and small, as great as the diversity of intellectual interests which the University represents. Among large objects may be mentioned twenty-eight unnamed professorships of as many different subjects which await endowment; among small, the numerous scholarships needed for the promotion of post-graduate and professional study. It would be a material improvement if the salaries of the President and Treasurer were provided for by endowment; for these two salaries are now a heavy charge upon the unrestricted income of the University, and they are annually fixed by a small board of which both those officers are members. Any small fund given in partial support of a large object will be continuously useful, in proportion to its size and the importance of the object, and will faithfully perpetuate the memory of the giver. Thus in 1727 the Rev. Thomas Cotton, a dissenting min-

ister of London, and Bridget his wife, gave the College £100, directing its income to be appropriated to the "augmentation of the President's salary for the time being." The President still receives a modest addition to his salary from the Thomas Cotton fund. It may be doubted whether a building is, after all, so durable and desirable a memorial as a fund, the income of which is devoted to an object of permanent interest and worth. Buildings get out of fashion and decay, or are remodelled and converted to new uses. The buildings which the College occupied in the 17th century have all disappeared; of the four buildings which belong to the 18th century, three have been put to new uses, and two of these three have been completely transformed as to their interiors several times; but the permanent funds which have come down from those centuries are still doing the very work which the givers meant them to do, and time only adds to the interest with which they are regarded.

The usual information concerning the number of students, and the honors, prizes, and degrees given in 1881-82, together with a list of the examining committees appointed for that year by the Board of Overseers, will be found in the Appendix (IV-VIII). The attention of the Overseers is respectfully invited to the following reports from the Deans of the several Faculties, the Secretary of the Academic Council, the Librarian, the Directors of the Botanic Garden, Observatory, Chemical Laboratory, and Arnold Arboretum, and the Curator of the Museum of Comparative Zoölogy.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, January 4, 1883.

REPORTS

OF THE

DEANS OF THE FACULTIES, THE SECRETARY OF THE
ACADEMIC COUNCIL, THE LIBRARIAN, THE DIRECTORS
OF THE BOTANIC GARDEN, OBSERVATORY, CHEMICAL
LABORATORY, AND ARNOLD ARBORETUM, AND THE
CURATOR OF THE MUSEUM OF COMPARATIVE ZOÖLOGY.

REPORTS.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR, — In accordance with the votes of the governing boards of the University, communicated to me in your letter of March 18, I entered upon the duties of Dean of the College Faculty on Commencement Day, when Professor Dunbar resigned the office which he had administered with such ability and success for nearly seven years. I have the honor to submit the following report on the condition of the College during the Academic year 1881–82.

At the beginning of the year the whole number of undergraduates was eight hundred and twenty-three. The Senior class numbered one hundred and eighty-two. Of these, one was subsequently obliged to withdraw on account of ill health, and one died a short time before Commencement; one was required to leave College for persistent violation of the regulations relating to attendance, one was refused his degree for the same reason, and five failed to obtain their degrees on account of deficiencies of scholarship. On the other hand, one member of the class who had been obliged, for personal reasons, to leave College at the end of his Junior year, was permitted to take the examinations and graduate with his class; and five former members, who had been removed to a lower class on account of deficiencies of scholarship, succeeded so far in making good those deficiencies that three of them were recommended for the degree, and two were restored to their class with the privilege of graduating in

some future year on making up the deficiencies still remaining. The net result of these losses and gains was a graduating class of one hundred and seventy-seven.

The number of failures to obtain the degree, due to deficiencies of scholarship, during each of the past seven years, is shown in the following table :—

	1876.	1877.	1878.	1879.	1880.	1881.	1882.
Passed in all their work . . .	135	170	144	189	162	182	177
Failed, but can make up . . .	6	17	11	5	6	9	7
Failed, and must repeat the year	3	2	4	..	..	..	..

The numbers of the three other classes, and the changes of all kinds in their composition from October, 1881, to October, 1882, are as follows :—

	Present, October, 1881.	Loss.	Gain.	Present, October, 1882.
Class of 1883	(Juniors) 207	13	10	(Seniors) 204
Class of 1884	(Sophomores) 217	25	18	(Juniors) 210
Class of 1885	(Freshmen) 217	23	14	(Sophomores) 208

The nature of the losses and gains of the several classes is shown by the following table :—

	Class of 1883.	Class of 1884.	Class of 1885.	Total for three Classes.
LOSSES.				
Left College without completing the year	6	11	6	23
Left College after completing the year	2	7	6	15
Removed to a lower class . . . . .	...	6	4	10
Advanced to a higher class	5	1	7	13
Total loss	13	25	23	
GAINS.				
From higher classes	3	...	7	
From lower classes	2	7	...	
Newly admitted	5	11	7	
Total gain	10	18	14	

It will be seen that thirty-six students who were members of these three classes last year have not returned to College this year. Of these, one died in the summer vacation in consequence of a wound received at the hands of a United States soldier at Fort Popham, Me.; twelve withdrew voluntarily after completing the work of the year, and sixteen without completing it, for various reasons of a personal nature; four withdrew after having received notice that their deficiencies of scholarship were such that they could not go on with their classes; and three were required to leave before the end of the year in consequence of persistent neglect of their college duties. The last two categories are included in the figures for 1882 in the following table, which shows the number of students who in the last eight years have been removed from their classes for deficiencies of scholarship:—

	1875.	1876.	1877.	1878.	1879	1880.	1881	1882.
Removed to lower classes . .	19	28	17	25	14	22	18	14
Withdrawn during the year .	13	8	16	4	11	4	7	3
Total	32	36	33	29	25	26	25	17
Whole number of students .	716	776	823	813	819	813	829	823

At the examination for admission to the Freshman class in 1882, some slight changes in the requirements, announced two years ago, went into effect. The changes referred to were adopted in accordance with the suggestions of conferences of instructors in several New England colleges, which met for the purpose of bringing about a greater degree of uniformity in the requirements for admission. In Latin the new requirements prescribe Books I.–VI. of the Aeneid (or Books I.–V. with the Eclogues), instead of Books I.–IV. and the Eclogues, and permit the substitution of Sallust's Catiline for one book of Caesar. In the Latin elective subjects five, instead of four, orations of Cicero are specified for examination, and an examination in the translation at sight of average passages from the Aeneid and from Ovid's Metamorphoses is substituted for the examination on Books V.–IX. of the Aeneid. In this group, moreover, there are now three papers of one hour each, as in the Greek elective group, instead

of two of an hour and a half each. In English Composition the examination was extended to an hour and a half, the additional half-hour being given to the correction by the candidate of specimens of bad English.

The examinations at the end of June were held in Cambridge, Exeter, N. H., New York, Philadelphia, Cincinnati, Chicago, San Francisco, and St. Louis,—in the last-named city for the first time. The preliminary examination of 1881 had given good reason to look for an unusually large number of candidates for admission this year, and this expectation was not disappointed. The following table shows the number of candidates and the general result of the examinations under the present method for each of the past three years:—

	1880.	1881.	1882.
Candidates offered	236*	253	315
“ [admitted	216	231	286
“ “ clear	82	99	116
“ rejected	20	22	29

The various combinations of elective groups offered by candidates each year since the establishment of the present method of examination are shown in the following table. It will be observed that this year thirty-seven candidates offered more than the two groups required. Of those who offered only two groups, about three fourths presented Greek and Latin. The remaining combinations were offered by comparatively small numbers, but a growing preference for Latin and Physical Science is noticeable.

* In 1880 the whole number of candidates was 278, of whom 42 were examined by the old method.

Number of Candidates who offered	1878.	1879.	1880.	1881.	1882.
Latin, Greek, Mathematics, and Physical Science	2	3	2	4	6
Latin, Greek, and Mathematics . . .	4	8	15	14	17
Latin, Greek, and Physical Science . .	2	3	7	5	11
Latin, Mathematics, and Physical Sci. .	2	..	2	1	3
Greek, Mathematics, and Physical Sci. .	..	1	..	1	0
Latin and Greek	104	109	159	177	204
Latin and Mathematics	3	14	17	13	12
Latin and Physical Science	9	23	20	25	41
Greek and Mathematics	1	2	..	2	5
Greek and Physical Science	1	1	4	..	3
Mathematics and Physical Science . .	5	15	10	11	13
Total number of candidates . . .	133	179	236	253	315

The actual numbers and the percentage of candidates offering each group in 1881 and 1882—the only years in which all candidates have been examined under the present method—were as follows :—

	1881.		1882.	
Whole number of candidates	253		315	
Number offering		Per ct.		Per ct.
Latin	239	94	294	93
Greek	203	80	246	78
Mathematics . .	46	18	56	18
Physical Science	47	18	77	24

The results of the examinations in the several subjects of the present requirements since they were first used are as follows :—

1878. 133 Candidates. 1879. 179 Candidates. 1880. 236 Candidates. 1881. 253 Candidates. 1882. 315 Candidates.	PRESCRIBED SUBJECTS.										
	Caesar and Virgil.	Latin at Sight and Composition.	Xenophon or Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Plane Geometry.	Physics.	English Composition.	French or German.
Percentage failing in each study.											
1878	14	7.5	29	18	20	13	31.5	43	14	19	36
1879	8	11	20	23	18	14.5	28.5	37	19	28.5	21
1880	14	6	17	17	15	14	29	36	11	17	13
1881	8	6	12	13	15	14	25	27	7	10	13
1882	7	11	7	16	11	12	27	20	14	15	15
ELECTIVE SUBJECTS.											
	Cicero and Virgil.	Latin at Sight and Composition.		Herodotus.	Greek Comp.	Iliad.	Trigonometry.	Solid Geometry.	Elective Physics.	Chem. or Botany.	
Percentage failing in each study.											
1878	7	15		17.5	36	21	29	65	38	57	
1879	16	23		22	33	13	32.5	60	48	24	
1880	14	22		12	33	14	39	48	18	9	
1881	15	13		12	19	12	30	41	16	27	
	Cicero.	Virgil and Ovid.	Comp.								
1882	13	11	29	10	19	9	45	27	17	13	

Of the two hundred and eighty-six candidates who were admitted to the Freshman class, three passed further examinations and were admitted to higher classes, and two hundred and forty-five entered the Freshman class. Of the remaining thirty-eight, some are known to have gone to other colleges, and some intend to enter Harvard College next year; but a large number have undoubtedly taken the examination merely to obtain our certificate of admission, and without any intention of entering college at all.

The present Freshman class began the work of the year with a membership of two hundred and sixty-four, made up as follows:—

Admitted in 1882	245
Previously admitted	14
Removed from a higher class	5
Total	264

The whole number of candidates who offered themselves for a preliminary examination this year was two hundred and eighty-seven, of whom two hundred and thirty-three obtained certificates, having passed in at least five subjects. The following table exhibits the general results of the preliminary examinations on the present requirements for four years:—

Number of candidates who passed in	1879.	1880.	1881.	1882.
Five subjects	38	30	38	40
Six "	29	24	30	28
Seven "	23	31	46	46
Eight "	29	33	65	58
Nine "	13	22	17	33
Ten "	10	10	19	24
Eleven "	3	..	5	4
Received certificates	145	150	220	233
Failed to pass in five subjects	70	64	46	54
Total number of candidates	215	214	266	287

The next table shows, for the same period, the proportion of candidates examined in each subject under the present method, and the proportion of failures in each:—

Preliminary Examinat'n.	Caesar and Virgil.	Latin at Sight.	Xenophon or Greek Reader.	Greek Sentences.	Ancient History and Geography.	Arithmetic.	Algebra.	Geometry.	Physics.	English.	French.	German.
1879, 215 Candidates.												
1880, 214 "												
1881, 266 "												
1882, 287 "												
Percentage of the whole number of candidates who were examined in each study.												
1879	89	86	74	80	77	96	93	55	55	69	56	7
1880	92	88	78	76	84	97	87	46	61	53	64	5
1881	88	86	78	79	76	97	82	46	74	61	54	5
1882	93	93	77	83	83	97	88	41	75	64	51	5
Percentage of failure among those examined in each study.												
1879	24	25	33	44	23	26	52	78	15	53	13	14
1880	25	25	25	26	39	22	50	61	7	34	21	30
1881	15	19	28	24	22	21	35	41	17	19	17	14
1882	20	26	9	30	27	17	37	27	12	37	17	14

It is gratifying to report that the order of the College during the past year was very satisfactory. The Faculty was not called upon to impose any penalty for disorder beyond an admonition in a single case.

The courses of instruction for 1881-82, with the names of the several instructors, the numbers of students* of various classes and departments in regular attendance on each, the number of sections into which the students were divided, and the number of hours of attendance per week for instructors and for students, are exhibited in the tables given on pages 62-67. The whole of the work done by undergraduates, however, is not shown by this statement, as a considerable number of them took one or more graduate courses, having carried their studies in special departments sufficiently far to enable them to do so.

Instruction in Elocution was given by Messrs. Ticknor, Sargent, and Jones to fifty-nine Seniors, sixty-six Juniors, forty-eight Sophomores, and seventy-three Freshmen. The Freshmen were taught in four sections, each one hour a week. During the first half-year, the Sophomores were similarly taught in three sections; in the second half-year by individual appointments of ten minutes each, once a week. The Juniors and Seniors received instruction by individual appointments of fifteen minutes each week.

Among the valuable opportunities for instruction enjoyed by the students of the College it is proper to mention the public lectures given each year under the auspices of the University by men of distinction in their special departments, and the evening readings by College instructors in ancient and modern classics. In 1881-82 one hundred and twelve public lectures were given on subjects in Theology, Classical Philology, Archaeology, Pedagogy, English Literature, Political Economy, and Natural History; and forty-seven evenings were occupied with readings from Hebrew poetry, Homer, Aeschylus, Sophocles, Aristophanes, Theocritus, Terence, Catullus, Sallust, Horace, Livy, Tacitus, Chaucer, and Shakspere.

In arranging the elective studies for the present academic year,

* To designate the various kinds of students in the several courses, the following abbreviations are used: Se. for Senior, Ju. for Junior, So. for Sophomore, Fr. for Freshman, Sp. for Special Student, Gr. for Graduate Student, Law for Law Student, Di. for Divinity Student, and Sc. for Scientific Student.

PRESCRIBED STUDIES.

Instructors.	Subjects.	Text-Books.	No. of Students.	No. of Sections.	Hours per week for Students.	Hours per week for Instructors.
FRESHMEN.						
Profs. Goodwin, J. W. White, and Dyer, and Messrs. Crosswell, Preble, and Phillips	Greek	{ [<i>Maximum Sections.</i>] — Lysias (five orations). — Plato (Apology). — Homer (Odyssey, eight books). — Suidas's Greek Prose Composition, Part I. — Translation at sight. — Goodwin's Greek Moods and Tenses. — Selections from Grote's History of Greece [<i>Advanced Sections.</i>] — In addition to the above, Aristophanes (The Clouds) and fifteen lectures on Greek Etymology in connection with Iliad XVIII. [<i>Minimum Section.</i>] — Herodotus and Thucydides (Selections in Goodwin's Greek Reader). — Homer (Iliad, Books IV.-IX.). — Translation at sight. — Composition. — Goodwin's Greek Moods and Tenses. — Selections from Grote's History of Greece [<i>Maximum Sections.</i>] — Livy (Books XXI.-XXII.). — Horace (Odes and Epodes). — Cicero (De Natura Deorum, Book I.). — Translation at sight. — Latin Prose Composition. — Selections from Mommsen's History of Rome [<i>Advanced Sections.</i>] — In addition to the above, Plautus (Trinummus) and Cicero (De Amicitia) [<i>Minimum Section.</i>] — The same authors as the maximum sections, but in smaller quantities. — Translation at sight. — Latin Prose Composition Twenty lectures on Greek and Roman Literature Sheldon's Grammar. — The Joynes-Orto German Reader. — Hauff's Märchen. — Deutscher Novellenschatz (Vol. XIV.). — Writing German [<i>Advanced Sections.</i>] — A more extended course in the same books Brachet (Petite Grammaire Française). — Bacher's Reader. — A. Achard (Le Clos Pommier). — Feuilleton (Roman d'un jeune homme pauvre) [<i>Maximum Section.</i>] Algebra (Todhunter, Chapters I. — XXXVI., XLVI., LI.). — Analytic Geometry (Lectures) [<i>Minimum Sections.</i>] — Algebra (as above). — Chauvenet's Solid Geometry. — Wheeler's Plane Trigonometry. — Analytic Geometry (Lectures) [<i>Maximum Sections.</i>] — Ganot's Physics (Mechanics, Hydrostatics, Pneumatics, Heat, and part of Light). — Lectures [<i>Minimum Sections.</i>] — The same, omitting the more technical portions. Elementary Chemistry (twenty lectures)	108, 1 So. 72, 1 Sp. 35, 1 Ju., 4 Sp.	2 or 3 1 or 2 1	3 3 3	7
	Latin		106, 5 Sp. 91 8, 3 Sp. 208, 5 Sp. 99, 1 Ju., 5 Sp. 76, 1 Sp.	3 or 6 1 or 2 1 1 2 or 4 1 or 2	3 3 3 3 3 3	12 5 3 3 5
	Greek and Latin		27, 1 Ju., 1 So., 5 Sp., 3 Sc. 35, 1 Se., 3 Ju., 8 So., 2 Sp. 180, 4 Sp., 1 Sc.	1 1 8	7 in two weeks. 7 in two weeks.	7 in two weeks. 28
German		33, 3 Sp.	1	2	2	
French		176, 1 Ju., 5 Sp. 209, 8 Sp.	1 1	2 1 after Christmas.	2 1 after Christmas.	
Mathematics						
Physics						
Chemistry						
Dr. Hall						
Prof. Jackson						
Mr. Drennan and Dr. Gummere	Rhetoric	202, 7 Fr., 7 Sp., 3 Sc., 1 Law	4	2	8	
Mr. Drennan and Dr. Gummere	Themes	211, 2 Se., 4 Ju., 3 Sp., 2 Sc.				

SOPHOMORES.

Hill's Principles of Rhetoric. — Exercises in Writing and Criticism

Six Themes, corrected and rewritten

Mr. Drennan and } Dr. Gummere Dr. Snow	Themes Forensics	JUNIORS.	
		Six Themes, corrected and rewritten { Four Forensics { These substituted for Forensics, as allowed by the rules, by	182, 9 Se., 1 Sp. 187, 5 Se., 1 Sp. 14
Dr. Snow	Forensics	SENATORS.	144, 5 Ju. 39
		{ Four Forensics { Written work substituted for one or more Forensics, as allowed by the rules, by	

ELECTIVE STUDIES.

Instructors.	Courses.	Subjects and Text-Books.	No. of Students.	No. of Sections.	Hours per week for Students.	Hours per week for Instructors.
Prof. Toy	Hebrew	Davidson's Grammar. — The Hebrew Bible	2 Se., 11 Di.	1	3	3
Prof. Lanman	Sanskrit	Whitney's Grammar. — Lanman's Reader	1 Se., 1 Ju., 1 Sp.	1	3	3
Prof. Greenough	Classics 1	{ Greek and Latin Comparative Philology. — Curtius's Etymology. — Papillon's { Greek and Latin Inflections	Omitted in 1881-82.		3	
Prof. Greenough	Classics 2	{ Practice in speaking and writing Latin, in connection with the elementary { critical study of a Latin author. — Cicero (Brutus). — Ritter and Preller's { Historia Philoſophiæ	1 Se., 1 Ju., 3 Gr.	1	2	2
Prof. Dyer	Greek 1	{ Plato (Protagoras). — Sophocles (Ajax). — Euripides (Bacchæ). — Aeschylus { (Prometheus)	1 Ju., 18 So., 1 Sp.	1	2	2
Prof. J. W. White	Greek 2	Thucydides (Books VI., VII.). — Aristophanes (Birds). — Euripides (Cyclops)	5 Ju., 32 So., 2 Fr., 2 Gr.	1	2	2
Prof. J. W. White	Greek 3	Practice in reading at sight. — Herodotus (Books III.-VI.)	{ 1 Se., 4 Ju., 52 So., 1 Fr., { 1 Sp., 2 Gr.	1	2	2
Prof. Dyer and } Dr. Phillips }	Greek 4	Composition (First Course). — Sidgwick's Greek Prose Composition	2 Se., 3 Ju., 25 So., 1 Di.	2	1	2
Prof. Dyer	Greek 5	{ Composition (Second Course). — Sidgwick's Greek Prose Composition. — Sargent { and Dallin's Materials and Models	7 Ju., 3 Gr.	1	1	1
Prof. J. W. White	Greek 6	{ Composition (Third Course). — Sidgwick's Greek Prose Composition. — Selected { Exercises	7 Se., 1 Ju., 2 Gr.	1	1	1
Prof. J. W. White	Greek 7	{ Thucydides (Books I., II.). — Aeschines (in Ctesiphontem). — Demosthenes (de { Corona)	7 Se., 9 Ju., 2 So., 1 Fr., 1 Gr.	1	3	3
Prof. Goodwin } and J. W. White }	Greek 8	Plato (Republic). — Aristotle (Ethics I.-IV., X.)	11 Se., 4 Ju., 3 Gr.	1	3	3
Prof. Goodwin	Greek 9	{ Aeschylus (Seven against Thebes and Eumenides). — Sophocles (Oedipus at { Colonus). — Aristophanes (Knights). — Pindar (Selections)	12 Se., 8 Ju., 2 Gr.	1	3	3

ELECTIVE STUDIES. — CONTINUED.

Prof. Sophocles	Greek 10	Arrian (Anabasis)	1	2	2
Prof. J. W. White	Greek 11	The Private Life of the Greeks (Lectures)	1	1	1
Prof. Smith	Latin 1	{ Terence (Phormio, Andria, and Hantontimorumenos, Acts I., II.). — Cicero (Selected Letters). — Tacitus (Agricola). — Horace (Satires and Epistles). — Translation at sight	1	3	3
Prof. Greenough	Latin 2	Terence. — Cicero (Pro Murena). — Horace (Satires and Epistles)	1	1	1
Messrs. Crowsell and Preble }	Latin 3	Composition (First Course). — Nixon's Parallel Extracts. — Selected Exercises	2	2	2
Prof. Smith	Latin 4	Latin Poetical Literature. — Lectures on the Latin Poets, with illustrative readings from Thackeray's Anthology	1	2	2
Prof. Greenough	Latin 5	Latin Prose Literature. — Cicero (against Verres). — Tacitus (Histories)	1	3	3
Prof. Lane	Latin 6	Suetonius (Lives of Claudius, Nero, Galba, Otho, Vitellius, Vespasian). — Tacitus (Selections from Books XI.-XV. of the Annals). — Juvenal (Selected Satires). — Translation at sight	1	3	3
Prof. Lane	Latin 7	Composition (Second Course)	1	3	3
Prof. Lane	Latin 8	Plautus (Amphitruo, Trinummus, Miles Gloriosus, Rudens). — Lactantius — Juvenal	1	3	3
Prof. Smith	Latin 9	Composition (Third Course). — Lectures on the Chria, with Exercises. — Pott's	2	1	2
Prof. Child	English 1	Chaucer (Canterbury Tales). — Bacon (Essays). — Milton (Selected Poems)	1	3	3
Prof. Child	English 2	Shakspere (seven plays)	1	3	3
Prof. Child	English 3	Anglo-Saxon. — Sweet's Anglo-Saxon Reader	1	3	3
Prof. Child	English 4	Early English. — Mätzner's Altenglische Sprachproben	1	2	2
Prof. A. S. Hill	English 5	Rhetoric and Themes (Advanced Course)	1	3	3
Prof. A. S. Hill	English 6	Oral discussion	1	3	3
Prof. A. S. Hill	English 7	English Literature of the Nineteenth Century	1	3	3
Prof. Cook	German 1	Mügge (Am Malanger Fjord). — Wichert (Ein Schritt vom Wege). — Freytag (Aus dem Jahrhundert der Reformation)	1	1	1
Prof. Bartlett	German 2	Der Neue Plutarch (Vols. II. and III.). — Selections from the poets of the Nineteenth Century	1	3	3
Mr. Hodges	German 3	Hodges's Course in Scientific German. — Heimboltz, Virchow, &c. (Populäre Wissenschaftliche Vorträge)	1	2	2
Mr. Lutz	German 4	Composition and Grammar. — Sheldon's Grammar. — Otto's Materials for translating from English into German. — Zschokke (Der Iode Gass)	1	1	1
Prof. Bartlett	German 5	Biographies of Goethe and Schiller. — Echtermeyer's Collection of German Lyrics and Ballads	1	3	3
Prof. Cook	German 6	Lessing (Emilia Galotti and Minna von Barnhelm). — Goethe (Egmont). — Wieland (Oberon)	1	3	3
Prof. Bartlett	German 7	Schiller. — Lessing (Minna von Barnhelm). — Vichoff (Schiller's Leben). — Literary Histories of Kurz, Koberstein, and Hettner	1	3	3
Prof. Jacquinet	French 1	Brachet's Petite Grammaire, Française (2e Partie). — Stahl (Histoire d'un lièvre). — G. Sand (Nanon). — J. Sandeau (Mlle. de la Seiglière)	2	3	6

Prof. Bécher	French 2	La Fontaine (Fables). — Taine (La Fontaine et ses Fables). — Racine (Oeuvres Choies)	2 Se., 4 Ju., 18 So., 1 Fr.	1	3	3
Prof. Bécher	French 3	Molière (Oeuvres). — Corneille (Le Cid). — Montaigne (Selections). — Paul Albert (Littérature Française jusqu'au XVIIIe siècle)	5 Se., 6 Ju., 6 So., 2 Fr., 3 Law, 1 Sc.	1	3	3
Prof. Jacquinet	French 4	Paul Albert (Littérature Française au XVIIIe siècle). — Montesquieu — Voltaire. — D'Alembert. — Diderot. — J. J. Rousseau. — Buffon. — Gresset. — Piron (La Métronome). — Marivaux. — Beaumarchais. — V. Hugo (Notre Dame de Paris). — Balzac (La Recherche l'absolu). — Cherbulez (Le Comte Kostia). — T. Gautier (Le Capitaine Français). — Scribe et Legouvé (La Bataille de Dames). — Labiche et Delacour (La Cagnotte)	5 Se., 3 Ju., 4 So., 2 Fr., 2 Sp.	1	3	3
Mr. Bendelari	French 5	Toscani's Italian Grammar. — Silvio Pellico (Le Mie Prigioni). — De Amicis (Racconti Militari). — Manzoni (I Promessi Sposi)	28 Se., 26 Ju., 8 So., 2 Fr., 2 Sp.	1	3	3
Mr. Bendelari	Italian 1	Ariosto (L'Orlando Furioso). — Tasso (La Gerusalemme Liberata). — Silvio Pellico (Francesca da Rimini). — Gherardi del Testa (three plays). — Nota (La Bocaccio (Il Decamerone). — Petrarca (Le Rime). — Dante (La Divina Commedia; La Vita Nuova)	10 Se., 17 Ju., 13 So., 1 Sp., 4 Gr.	1	3	3
Mr. Bendelari	Italian 2	Fiera). — Carrera (La Quaderma di Nanni)	6 Se., 6 Ju.	1	3	3
Mr. Bendelari	Italian 3	Josse's Spanish Grammar. — El Eco de Madrid. — Gil Blas	5 Se., 1 Ju., 1 Sp.	1	3	3
Mr. Bendelari	Spanish 1	Comedias de Moratin. — Hartzenbusch (Obras Escogidas). — Cervantes (Don Quixote)	{ 17 Se., 10 Ju., 14 So., 1 Fr., 1 Gr.	1	3	3
Mr. Sheldon	Spanish 2	Calderon. — Lope de Vega. — Early Spanish. — Outline of the History of Spanish Literature	6 Ju., 1 So., 1 Sp.	1	3	3
	Spanish 3	Logic and Metaphysics. — Jevon's Logic. — Ferrier's Lectures on Greek Philosophy	Omitted in 1881-82.		3	
Prof. Palmer	Philosophy 1	Psychology. — Taine (On Intelligence)	3 Se., 20 Ju., 30 So., 1 Fr.	1	2	2
Prof. James	Philosophy 2	Ethics. — Mill's Utilitarianism. — Kant's Theory of Ethics. — Lectures and Theses	1 Sp., 1 Sc.	1	2	2
Prof. Palmer	Philosophy 3	Contemporary Philosophy. — Mill's Logic. — Theses	4 Se., 8 Ju., 10 So., 5 Sp.	1	3	3
Prof. James	Philosophy 4	English Philosophy. — Locke. — Berkeley. — Hume	15 Se., 16 Ju., 1 Di.	1	3	3
Prof. Palmer	Philosophy 5	Early French and German Philosophy. — Bouillier's Histoire de la Philosophie Cartésienne. — Kant's Critique of Pure Reason. — Bowen's Modern Philosophy	9 Se., 13 Ju.	1	3	3
Prof. Bowen	Philosophy 6	German Philosophy of the Present Day. — Schopenhauer's Die Welt als Vorstellung und Wille. — Hartmann's Philosophie des Unbewussten	Omitted in 1881-82.	1	3	3
Prof. Bowen	Philosophy 7	Legislation of the United States	17 Se., 21 Ju.	1	3	3
Prof. Dunbar and Dr. Laughlin }	Political Econ. 1	Carnes's Leading Principles of Political Economy. — Giffen's Essays in Finance. — Lectures and Theses	5 Se., 1 Gr.	1	3	3
Prof. Dunbar	Political Econ. 2	Mediaeval and Modern History (introductory to courses six and seven). — Lewis's History of Germany. — Zeller's Histoire d'Italie	23 Se., 97 Ju., 17 So., 2 Fr., 7 Sp., 1 Sc.	2	3	6
Dr. Emerton	History 1	Mediaeval and Modern History (introductory to course eight). — The Student's Hume. — The Student's History of France	21 Se., 9 Ju., 2 Gr.	1	3	3
Mr. Macvane	History 2	Constitutional Government in England and the United States (introductory to courses nine and eleven)	1 Se., 3 Ju., 18 So., 1 Fr.	1	2	2
Mr. Macvane	History 3	Roman History to the Fall of the Republic, with especial reference to the Development of Political Institutions in Greece and Rome. — Mommsen's History of Rome	5 Se., 11 Ju., 65 So., 5 Fr., 3 Sp., 1 Sc.	1	2	2
			13 Se., 15 Ju., 56 So., 1 Fr., 3 Sp.	1	2	2
Prof. Gurney	History 4		5 Se., 4 Ju., 5 So., 1 Sp.	1	2	2

ELECTIVE STUDIES. — CONTINUED.

Prof. Gurney	History 5	{ Later Roman and Early Medieval History (from Augustus to Charlemagne) with especial reference to Institutions. — Mervale's History of the Romans under the Empire. — Gibbon's Decline and Fall of the Roman Empire. — Arnold's Roman Provincial Administration General History of Europe from the beginning of the Ninth to the end of the Thirteenth Century The Revival of Learning and the Reformation (1400-1550). — Lectures History of England to the Seventeenth Century (Constitutional and Legal). — Lectures Constitutional and Political History of the United States to the year 1850. — Lectures European History during the Seventeenth Century and the first half of the Eighteenth Century European History from the Middle of the Eighteenth Century Institutes of Gaius and Justinian Institutes of Gaius. — Institutes and Digest of Justinian Principles of Delimitation, Color, and Chiaroscuro. — Ruskin's Modern Painters, Elements of Perspective, and Elements of Drawing Principles of Design. — Ruskin's Modern Painters and Stones of Venice. — Woltman's History of Painting. — Crowe and Cavalcaselle's History of Painting. — Westrop's Handbook of Archaeology Ancient Art. — Lectures Art from the Fall of the Roman Empire to the year 1600 Greek Art Romanesque and Gothic Art from 1000 to 1350. — Lectures Harmony. — Richter's Harmony Counterpoint. — Richter's Counterpoint History of Music. — Von Donner's Musikgeschichte The Instrumental Music of Haydn, Mozart, Beethoven, Mendelssohn, and their successors Practical Applications of Trigonometry. — Principles of Surveying. — Spherical Trigonometry. — Applications of Spherical Trigonometry to Astronomy and Navigation Calculus (First Course). — Byerly's Differential Calculus Todhunter's Theory of Equations. — Minchin's Statics Analytic Geometry (for students who had taken the Maximum Freshman Course in Mathematics). — Lectures Calculus (Second Course). — Byerly's Integral Calculus. — Boole's Differential Equations Analytic Mechanics, with an Introduction to Quaternions. — Clifford's Elements of Dynamic and Kerr's Rational Mechanics, with Selections from other works. — Lectures on Quaternions	1	3	3
Dr. Emerton	History 6	Omitted in 1881-82	1	3	3
Dr. Emerton	History 7	20 Se., 14 Ju., 2 So., 1 Fr.	1	3	3
Dr. Young	History 8	21 Se., 19 Ju., 2 So., 1 Fr., 2 Sp., 1 Gr.	1	3	3
Dr. Snow	History 9	56 Se., 49 Ju., 9 So., 2 Fr., 2 Sp., 1 Sc.	1	3	3
Mr. Macvane	History 10	Omitted in 1881-82	1	3	3
Mr. Macvane	History 11	62 Se., 53 Ju., 2 So.	1	3	3
Dr. Young	Roman Law 1	17 Se., 8 Ju., 1 Gr., 2 Law.	1	3	3
Prof. Gurney	Roman Law 2	3 Se., 2 Ju., 1 So.	1	3	1
Mr. Moore	Fine Arts 1	7 Se., 6 Ju., 10 So., 3 Sp., 2 Sc.	1	2	2
Mr. Moore	Fine Arts 2	1 Ju.	1	2	2
Prof. Norton	Fine Arts 3	{ 39 Se., 28 Ju., 5 So., 1 Fr., 2 Sp., 1 Gr., 1 Sc. Omitted in 1881-82	1	3	3
Prof. Norton	Fine Arts 4	Omitted in 1881-82	1	2	1
Prof. Norton	Fine Arts 5	13 Se., 11 Ju., 5 So., 2 Fr., 1 Sp.	1	1	1
Prof. Paine	Music 1	3 Ju., 8 So., 2 Sp., 1 Sc.	1	2	3
Prof. Paine	Music 2	1 Ju., 2 So.	1	3	3
Prof. Paine	Music 3	5 Se., 2 Ju., 2 So., 2 Fr., 3 Sp.	1	3	3
Prof. Paine	Music 4	4 Se., 1 Ju., 1 So., 2 Sp.	1	1	1
Prof. C. J. White	Mathematics 1	3 Se., 3 Ju., 8 So.	1	2	2
Dr. B. O. Peirce	Mathematics 2	2 Ju., 27 So., 1 Fr., 1 Sp., 1 Sc.	1	2	2
Dr. B. O. Peirce	Mathematics 3	1 Se., 5 So., 1 Sc.	1	2	2
Prof. Byerly	Mathematics 4	1 Se., 1 Ju., 9 So.	1	2	2
Prof. Byerly	Mathematics 5	2 Se., 5 Ju., 1 Sc.	1	3	3
Prof. Peirce	Mathematics 6	1 Se., 5 Ju.	1	3	3

Prof. Eustis	Mathematics 7	{ Descriptive Geometry and Perspective. — Church's Descriptive Geometry. — Lectures. — Problems in Shades and Shadows, Perspective, and Stereotomy Elliptic Functions	2 Se., 2 Ju., 1 So., 5 Se. Omitted in 1881-82	1	3	3
Prof. Byerly	Mathematics 8	{ Analytic Mechanics. — Lectures, with Walton's Problems in Theoretical Me- chanics, Todhunter's Analytic Statics, Tait and Steele's Dynamics of a Particle, and Routh's Rigid Dynamics, for reference	6 Se.	1	3	3
Prof. Peirce	Mathematics 9	{ Studies in Quaternions and in Analysis. — Individual study, embracing a wide range of topics, under the supervision of the Instructor	5 Se., 1 Gr.	1	3	3
Prof. Lovering	Mathematics 10	{ Astronomy, Optics, and Acoustics. — Herschel's Outlines of Astronomy. — Deschanel on Sound and Light. — Tyndall's Heat as a Mode of Motion	6 Se., 2 Ju., 20 So., 2 Se.	1	2	2
Prof. Trowbridge	Physics 1	{ Practical Exercises in the Laboratory, including the use of Instruments of Pre- cision. — Kohlrausch's Physical Measurements. — Pickering's Physical Manip- ulations. — Everett's Physical Constants	7 Se., 10 Ju., 31 So., 1 Fr., 1 So.	1	3	3
Prof. Trowbridge	Physics 2	{ The Conservation of Energy. — Stewart's Conservation of Energy. — Tait's Re- cent Advances in Physical Science. — Youmans's Correlation and Conserva- tion of Forces. — Maxwell's Theory of Heat. — Maxwell's Electricity and the Conservation of Energy	7 Se., 13 Ju., 6 So.	1	2	2
Prof. Lovering	Physics 3	{ Undulatory Theory of Light. — Electricity and Magnetism	Omitted in 1881-82	1	3	3 till Christ- mas.
Prof. Gibbs	Physics 4	{ The Spectroscope and its Applications	2 Se., 1 Gr.	1	3	3 till Christ- mas.
Prof. Jackson & Dr. Mabery	Physics 5	{ Descriptive Chemistry, with Laboratory work	{ 7 Se., 19 Ju., 69 So., 1 Fr., 3 Sp., 2 Se.	2	3	6
Dr. Melville	Chemistry 1	{ Determinative Mineralogy and Lithology, with study in the Mineral Cabinet. — Dana's Text-book	13 Se., 14 Ju., 10 So., 1 Sp., 1 Gr., 2 Se.	1	3	3
Prof. H. B. Hill and Dr. Mabery	Chemistry 2	{ Qualitative Analysis, with Laboratory Work	{ 6 Se., 27 Ju., 2 So., 1 Sp., 1 Gr., 2 Se.	1	3	3
Prof. H. B. Hill	Chemistry 3	{ The Carbon Compounds. — Lectures and Laboratory Work	4 Se., 6 Ju., 2 Sp.	1	3	3
Prof. Jackson	Chemistry 4	{ Advanced Course in Inorganic Chemistry. — Laboratory work	10 Se., 1 Ju., 1 Sp.	1	3	3
Prof. Cooke	Chemistry 5	{ Crystallography and the Physics of Crystals, with work in the Mineral Cabinet	5 Se.	1	3	3
Mr. Davis	Chemistry 6	{ Physical Geography and Meteorology. — Lectures	Omitted in 1881-82.	1	3	3
Dr. Mark	Chemistry 7	{ Zoology. — Huxley's Elementary Physiology	{ 18 Se., 14 Ju., 27 So., 3 Fr., 2 Sp., 5 Se.	1	3	3
Prof. Farlow	Natural Hist. 1	{ Botany. — Gray's Structural Botany. — Gray's Manual of the Botany of the Northern States	{ 8 Se., 12 Ju., 26 So., 2 Fr., 2 Sp., 4 Se.	1	2	2
Mr. Davis	Natural Hist. 2	{ Geology. — Dana's Manual of Geology. — Lectures and Field work	6 Se., 11 Ju., 21 So., 1 Sp., 3 Se.	1	3	3
Prof. Farlow and Prof. Faxon	Natural Hist. 3	{ Biology. — Lectures and Laboratory work	{ 29 Se., 14 Ju., 19 So., 2 Fr., 1 Sp., 3 Se.	1	3	3
Prof. Faxon	Natural Hist. 4	{ Advanced Zoology. — Lectures and Laboratory work	5 Se., 16 Ju., 6 So., 2 Se.	1	3	3
Prof. Farlow	Natural Hist. 5	{ Advanced Botany. — Lectures and Laboratory work	11 Se., 2 Se.	1	3	3
Mr. Davis	Natural Hist. 6	{ Advanced Geology. — Lyell's Principles of Geology. — Lectures and Field work	5 Se., 3 Ju., 1 Se.	1	3	3
	Natural Hist. 7		12 Se., 5 Ju., 1 Se.	1	3	3
	Natural Hist. 8			1	3	3

the Faculty departed from their previous practice in two important particulars. With the concurrence of the Academic Council, the courses which are designed especially for graduates, and which have hitherto been printed separately, were consolidated with the undergraduate courses, so that all the courses in each department are now included in a single list; and a simpler classification of courses was introduced.

The distinction between graduate and undergraduate studies had lost whatever significance may have been originally attached to it. Its disappearance recalls that of another, now almost forgotten, distinction among elective courses, by which they were classed as Senior, Junior, and Sophomore studies. The former change indicated the direction our system of instruction would take in its development,—its tendency towards growth in the lines of the special departments, to the obliteration of all distinctions among studies, except such as grow out of their characters or mutual relations; the present change may be regarded as a final step in the same direction. The courses in each department now form, as a rule, a progressive series, adapted to the successive stages of a student's progress in that department, but bearing no necessary relation to the time of his graduation. The line that has hitherto been drawn, setting apart graduate from undergraduate studies, has not been observed in practice. Graduate students, particularly candidates for the degree of Master of Arts, have selected their studies indifferently from the two lists, and a large proportion of the students in the graduate courses has always been drawn from the higher college classes. Taking the year 1880–81 as an illustration, we find that the graduate students gave sixty-nine hours a week of attendance to undergraduate courses, fifty-seven to graduate courses; twenty of the one hundred and two undergraduate courses were taken by from one to three graduates; and of the twenty-four graduate courses, seventeen were taken by from one to eight undergraduates. When the graduate courses were first established, their separate publication was perhaps necessary to draw attention to the fact that such instruction was provided. That necessity no longer exists, or exists in a much smaller degree, and the consolidation of the two lists now accomplished gives a much more convenient as well as a more effective presentation of the resources of the University in each department of liberal study.

An incidental result of this change was to bring into greater prominence the unsatisfactory character of the existing classification of studies, which assigned to each course a value, in the sum of work required of a student, proportioned solely to the number of hours a week of attendance which it demanded. A large majority of the undergraduate courses had three exercises a week, but there was a considerable number of two-hour courses, and a small number of one-hour courses. In 1881-82 there were sixty-seven three-hour, twenty-five two-hour, and twelve one-hour courses. That the number of exercises was a very imperfect criterion of the amount of work required in any study was well known to the Faculty. Apart from the inequalities arising from the diversity of the subjects treated and the various methods of instructors, it is evident that, other things being equal, a course having a smaller number of exercises involves a greater amount of work proportionally than one having a larger number. A student who divides six hours of attendance among three courses undertakes a harder task than one who divides the same time between two courses, especially if the studies are in different departments. The studies most underrated in the estimate by hours were one-hour undergraduate courses,—particularly those in Greek and Latin Composition, which require a disproportionately large amount of work outside of the recitation-room,—and the graduate courses. The latter had for the most part less than three exercises a week; the actual numbers in 1881-82 were, of three-hour courses nine, of two-hour courses twenty-four, and of one-hour courses six. These two-hour courses are among the most difficult that a student can take, and the injustice of counting them for less than an undergraduate course of three hours is obvious.

This state of things had come about by gradual growth, with the development of the elective system. No complete remedy for it is possible. No rule can be devised that will exact a uniform requirement of students selecting their work from a wide range of studies such as our system offers. But for this very reason a simple classification of studies is desirable: among courses so varied it is not wise to attempt to draw too fine distinctions. With a view therefore to greater simplicity, the Faculty, abandoning the fallacious standard of the number of hours of instruction, adopted a new system, under which all elective studies are

divided into two classes only, known as *courses* and *half-courses*, according to the estimated requirement of work in each. Under this arrangement a student is required to take, each year after his Freshman year, four courses, or an equivalent amount of courses and half-courses. All three-hour studies and all two-hour graduate studies are accounted full courses; all one-hour studies, with one or two exceptions, half-courses. The difficulty in dealing with the two-hour undergraduate courses was partly relieved by the disposition which had shown itself within a few years to enlarge such courses to the full complement of three hours. This had already been done in several instances by instructors who felt that they could not gain a satisfactory hold on the attention and interest of their pupils when they met them only twice a week. The success of the experiment in these cases and the adoption of the new classification combined to give new impulse to the movement, and nine more two-hour courses were now enlarged in the same way. In other instances a consolidation was effected of cognate courses. Of the old two-hour courses not disposed of in either of these ways, three, with some increase of the work required, were classed as full courses, and four, in which the work is lighter, as half-courses. In one instance a half-course was arranged with three exercises a fortnight.

The difficulties attending the transition from the old method were thus successfully overcome. In the application of the new system to new courses no serious difficulty is anticipated. The great majority of courses, it is expected, will have three exercises a week; but in some studies of an advanced character, which are not likely to be undertaken by any but the most capable and industrious students, two meetings a week with the instructor, or even in exceptional cases only one meeting, may be deemed sufficient. On the other hand, the system of half-courses provides a place for such studies as do not cover enough ground to fill out a complete course, and for those which, like Greek and Latin Composition, it is desirable that a student should pursue to a limited extent only, to supplement his study in other courses in the same department.

The changes introduced into the scheme of elective studies, due largely to the adoption of the two measures described above, but partly also to other causes, were numerous and important. The courses designated in the foregoing table as Greek 3, Latin 4,

Philosophy 1 and 2, Fine Arts 1 and 5, Mathematics 2, Physics 1, and Natural History 2 were enlarged to three-hour courses; and Greek 11 was enlarged by the addition of one lecture a fortnight. The first two courses in Greek, the two introductory courses in Mediaeval and Modern History, the course in Early English with the graduate course in *Beowulf*, the first and fourth courses in Music, and the courses in Advanced Analytic Geometry and in the Theory of Equations, were consolidated to form in each case a single full course. The graduate courses in Classical Philology were divided between the Greek and Latin lists, with the exception of the course in Greek and Latin Comparative Philology and the Practice course in Text Criticism and Interpretation, which were placed by themselves under a new head, "Greek and Latin." A course by Professor Allen on the critical study of Homer takes the place of his course on the Mythology of the Greeks and Romans. Professor Allen also takes charge of the course in Practice in speaking Latin, now reduced to one hour a week. In German, composition is to be taught in the first course, which will be conducted by Mr. Lutz, and the separate course in composition, together with the course in Scientific German, is abolished; on the other hand a new course in German classics is established, to be conducted by Professor Cook. In French the course in translation and reading at sight is reduced to two hours a week, and will be conducted by Professor Bôcher; and the course in old French and Provençal is discontinued. Two new half-courses in Philosophy, each consisting of one lecture a week by Professor F. G. Peabody, have been established, — one on the Philosophy of Religion, the other on Ethics in its Relation to Religion. In History, the subject of Professor Emerton's course is changed from the Revival of Learning and the Reformation, to the Protestant Reformation and the Roman Catholic Reaction. The graduate course in Roman Law has been discontinued. In Mathematics an advanced course has been established on Arbitrary Functions and the Theory of the Potential, to be conducted by Professor Byerly and Dr. B. O. Peirce; and the course on Elliptic Functions has been omitted from the list. The most marked increase in the amount of instruction offered has been made in the department of Semitic Languages by the accession of Professor Lyon to the Faculty. The elementary course in Hebrew has been transferred to Professor Lyon, Professor Toy retaining the advanced course in Hebrew and the course in Ara-

bic. The course in Old Testament Isagogics and Antiquities has been discontinued, and the following new courses established : a course in Aramaic, Classical and Jewish, once a week, by Professor Toy ; a course in Assyrian, twice a week, by Professor Lyon ; and three half-courses, each consisting of one lecture a week, on Quotations from the Old Testament in the New Testament, by Professor Toy, on the Criticism of the Pentateuch, by Professor Toy, and on Babylonian-Assyrian Antiquities, with special reference to Hebrew History, by Professor Lyon. In the foregoing statement temporary omissions of courses and transfers of instructors, owing to the absence of Professors Dunbar, Goodwin, Greenough, and James for the present year, have been passed over in silence, as not permanently affecting the character of the scheme.

The programme of elective courses for the present year, as finally arranged, contains one hundred and thirteen full courses and twenty-six half-courses. The total amount of instruction offered is three hundred and fifty-one and a half hours a week. The number of hours per week of instruction in each department, compared with the number offered in previous years, is as follows : —

Number of exercises per week in elec- tive courses offered in	1871-72	1872-73	1873-74	1874-75	1875-76	1876-77	1877-78	1878-79	1879-80	1880-81	1881-82	1882-83
Semitic Languages . .	3	3	3	3	3	3	3	4	4	11	8	13
Sanskrit and Zend . .	3	3	6	3	3	3	6	6	11	10	10	
Greek	24	25	22	23	25	23	23	24	26	29	25	25½
Latin	10	15	15	15	19	20	18	22	18	22	26	23
Greek and Latin . .	..	..	..	3	3	2	2	3	3	8	3	
English	6	8	8	5	8	11	14	15	16	16	16	15
German	9	8	8	11	14	17	19	24	25	22	23	23
French	14	14	14	18	12	15	15	15	15	14	18	14
Italian and Spanish	11	11	11	14	17	17	17	19	20	20	20	18
Philosophy	12	12	12	9	9	12	12	18	23*	24	17	21
Ethics	3	3	3	3	3	3	3	3	3	3	3	3
Political Economy .	3	3	3	6	6	6	6	6	9	9	7	7
History	15	17	17	20	20	23	23	25	25*	30	35	35
Roman Law . . . .	..	3	..	3	3	3	3	3	4	4	5	4
Music	3	5	8	11	14	11	12	13	13	15	14	14
Fine Arts . . . . .	..	..	..	6	9	4	6	9	8	6	8	11
Mathematics	21	24	20	24	20	23	24	28	30	26	26	24
Physics	12	12	12	14	15	15	17	22	21	19	19	20
Chemistry	11	11	14	14	14	18	18	21	26	26	23	23
Natural History . .	14	20	23	23	23	25	24	30	42	46	36	45
Aggregate	168	197	196	228	240	255	262	308	337	356	347	351½

* Elective courses amounting to four hours a week in Philosophy and six hours in History were established in 1878 to take the place of the prescribed work in those subjects, which was abolished at that time. They formed no actual increase in the amount of instruction given.

The recent enlargement of the instruction in Semitic Languages and in Sanskrit and Zend has now enabled the Faculty to provide Honors for an extended course of study in each of those departments. Honors have also been established in Political Science, the necessary courses of study being made up from the departments of Political Economy, History, and Roman Law.

In 1876 the Faculty began in a cautious way to admit to the elective courses persons who had not had the advantage of a regular preparation for college and were past the age when such preparation was possible or expedient for them, but who, nevertheless, were sufficiently trained in special lines of study to pursue with profit the courses of instruction in certain departments. The restrictions originally placed on the admission of this class of persons, who were known as unmatriculated students, have been gradually removed, until now all the courses of study in the College are open to any person of good moral character who satisfies the Faculty of his fitness to pursue the particular courses he elects. The number of such students has never been large; last year there were thirty-four, and forty-five are in attendance this year. Their character has been various. Many have made excellent use of the opportunities offered, some for purposes of special study, others to supplement an imperfect or irregular training by such studies as would enable them to gain admission to one of the higher college classes. On the other hand, some have undoubtedly taken advantage of this means of securing a connection with the University, who have come with no serious purposes of study. In order to improve the condition of the former and either exclude the latter or place them under better control, the Faculty last year took steps to define more carefully the relation of this class of students to the College, and established regulations which, while subjecting them to stricter discipline, considerably enlarged their privileges. They are to be known henceforth as Special Students; they are members of the College from the time of their admission, and subject to the College regulations, the Faculty reserving the right to deprive any one of his privileges who abuses or fails to use them. In their studies they are substantially on an equal footing with undergraduates in all respects except that they are not candidates for any degree. But no inducements are held out to enter the College in this way except to persons of ability and diligence.

No certificate is given to a special student for any course of study unless he has attained seventy-five per cent of the maximum mark in that course. On the other hand, any special student who has attained an average of seventy-five per cent in twelve elective courses — that is, in an amount equivalent to the whole elective work required of an undergraduate — will receive a certificate to that effect on Commencement Day, and have his name printed on the Commencement programme; and a Special Student may compete for Honors on the same terms as an undergraduate.

Another subject to which the Faculty gave much attention last year was the anticipation of Freshman studies. For a number of years past a candidate for admission has been permitted to present himself for examination, at the beginning of the Freshman year, on the prescribed work in Greek, Latin, Mathematics, Physics, French, or German, and if successful to take advanced studies in his Freshman year in place of those anticipated. This provision has been made use of every year by a small number of students who have had time and opportunity before coming to College to pursue their studies beyond the mere requirements for admission, and who by this means were enabled to cover a wider range of subjects in their college course, or to carry their studies farther in any special department which their taste led them to prefer. But a student who anticipated Freshman studies was not at all advanced thereby towards the attainment of his degree. The elective studies taken in place of those anticipated were counted in their stead as part of his Freshman work, and he entered his Sophomore year under the same conditions as his classmates.

The deliberations of the Faculty last year resulted in the conclusion that the time had come for a change of policy in this matter. The old rule was adopted at a time when the elective courses had not yet thrown off the restraints to which they had been subject as prescribed studies, when their scope was comparatively limited, and to exempt a student from a part of the work of his class was to give him less than adequate employment for his time, and to expose him to the temptations of idleness. The conditions under which a student now pursues his studies are far different. The elective system in its present state provides a large number of courses on which the time that may be spent by a student is practically unlimited; and it is no uncommon thing

for the most industrious students to devote themselves almost wholly to two or three studies in which they are especially interested, gaining the time for this by taking one or two easy courses to eke out their stint, and expending on these no more effort than is necessary to secure a high mark. The imposition of a uniform requirement for each year, however necessary in general, is a useless restraint in cases like these, and diverts a certain amount of effort from earnest and fruitful study to work of greatly inferior value. Under these circumstances it seems desirable not only to encourage students of the better class to anticipate a part of the work of the Freshman year, but to permit them to use the time thus gained for more extended study, if they so desire, in particular courses. The rule adopted by the Faculty provides that when a student, besides passing a creditable examination for admission, has passed with credit on any of the studies of the Freshman year, the work required of him in his college course shall be reduced by the amount anticipated; the reduction to be distributed among the four years at his own option, provided that it shall not in any year exceed the amount of one full course of study.

On the other branch of this subject, — the question of shortening the term of residence ordinarily required for the degree, — the Faculty proceeded more cautiously. They published a rule, that if a student has anticipated Freshman studies having an aggregate of nine hours a week of recitations and lectures, he may be admitted at once to the Sophomore class, on condition of performing the remaining work of the Freshman year — represented by about seven exercises a week — in the ensuing three years; but in this they have simply formulated the existing practice in the admission of candidates to the Sophomore class. They have, however, further announced that if a student who has anticipated Freshman studies amounting to less than nine hours, but still a substantial portion of the year's work, should desire to fulfil the requirements for the degree in three years, he may apply for leave to do so. The Faculty reserve their decision on applications of this kind until the circumstances of each case shall be known; but the announcement that such applications will be considered is an important step, and the response of future candidates to the suggestion thus thrown out will be awaited with interest.

CLEMENT L. SMITH, *Dean*.

December 1, 1882.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR, — I have the honor to submit the following Report on the state of the Graduate Department during the academic year 1881-82: —

Forty-two courses of instruction, arranged with special reference to graduates, were offered this year, under the heading of Graduate Courses, and by vote of the Academic Council. The number of these courses actually given was thirty-one, and the accompanying table shows the numbers and status of the persons in attendance upon them.

Instruction was also given by Professor Whitney, in Geology and Lithology, to two candidates for higher degrees.

A course in Zend given by Professor Lanman, in the year 1880-81, was accidentally left unnoticed in my last annual report.

On the 21st of December, 1881, the Council voted, at the suggestion of the College Faculty, to discontinue the separation between graduate and undergraduate courses. Thus the University has returned to the system which existed before 1877-78, of presenting only one list of studies for graduates and undergraduates alike. The separation between the two classes of studies has had a valuable influence in drawing attention to the courses offered to advanced students, and also in stimulating the interest of the academic boards in these courses, and increasing their number and variety. But now that this service has been accomplished, it seems unadvisable to keep up a distinction which rests on no clear principle. In practice, the so-called graduate courses have been largely taken by undergraduates; while graduates have often found in the College list the instruction which it was most desirable for them to follow. A sharp line of division cannot now be drawn between graduate students and seniors, any more than between the successive undergraduate classes.

Six persons were admitted this year to candidacy for the degree of A.M.; and the whole number of candidates for the degree was ten, of whom four withdrew, either in the course, or after the expiration, of the year. Five received the degree, and one still continues his candidacy.

Fourteen persons were admitted to candidacy for the degree of Ph.D.; and the whole number of candidates for that degree was

Courses.	Teachers.	Subjects.	Hours per Week.	Students.	Total No. of Students
Semitic Languages <i>a.</i>	Prof. Toy	Hebrew Grammar. Parts of Genesis, Judges, and Psalms. Written exercises	3	2 Se., 10 Di.	12
" <i>b.</i>	Prof. Toy	Hebrew Syntax. Lectures on Old Testament text-criticism. Amos, Ecclesiastes, and parts of Kings, Daniel, Job, Psalms, and the Pargums. Essays by Students	2	6 Di.	6
Sanskrit <i>a.</i>	Prof. Lanman	Sanskrit Grammar. Selections from the Laws of Manu, the Veda, the Brahmanas, and the Sūtras	3	2 Se.	2
" <i>b.</i>	Prof. Lanman	Myths of the Rīgveda. The book Pāuṣhya of the Mahā-bhārata. The entire drama, Kālidāsa's Sakuntalā	2	1 Gr.	1
Classical Philology <i>b.</i>	Prof. Goodwin	History of Greek Philosophy, Vols. I. and II.	2	2 Se., 6 Gr.	8
" <i>c.</i>	Prof. Sophocles	Pindar	2	2 Gr.	2
" <i>d.</i>	Prof. Lane	Quintilian (Book I.). Allen's Early Latin Remnants. Gellius (Selections). Theses	2	2 Se., 9 Gr.	11
" <i>e.</i>	Prof. Allen	Lectures on the History of the Roman Drama; Structure of Plays; Scenic Antiquities; Mètres. One play of Plautus, and fragments of chief tragic and comic poets	2	1 Se., 4 Gr.	5
" <i>f.</i>	Prof. Allen	Lectures on Greek and Roman Religion and Religious Institutions	2	3 Se., 3 Gr.	6
" <i>g.</i>	Prof's. Allen and Smith	Practice in Text-criticism and Interpretation. — Aristophanes (Knights); Propertius — Discussion of theses on philological subjects.	2	2 Se., 10 Gr.	11
Modern Languages <i>a.</i>	Prof. Child	Beowulf	1	3 Se.	3
" <i>b.</i>	Mr. Sheldon	Stevens's Grundzüge der Phonetik. Heyne's Uffilas. Written work in Phonetics and Gothic; Braune's Althochdeutsches Lesebuch begun	2	3 Se.	3
" <i>c.</i>	Mr. Sheldon	Hartmann von Aue (Der arme Heinrich and some of the Lieder.) Das Nibelungenlied.	3	2 Se., 1 Ju., 1 Fr., 1 Sp.	5
" <i>d.</i>	Mr. Bendelari	Walther v. d. Vogelweide (Selections.) Written work	3	1 Se., 1 Ju.	2
Philosophy <i>b.</i>	Prof. James	Old French and Provençal	2	2 Gr., 2 Med.	4
Political Economy <i>a.</i>	Prof. Dunbar	Advanced Psychology. (Course discontinued in March)	1	4 Se., 5 Gr.	9
History <i>b.</i>	Prof. Torrey	Public Finance	1	7 Se., 1 Ju., 1 Gr., 1 Law	10
" <i>c.</i>	Prof. Torrey	Elements of Public International Law; History of Modern Treaties	2	7 Se.	7
" <i>d.</i>	Dr. Young	Forms of Government and Political Constitutions (particularly in Continental Europe) since 1789	3	3 Se.	3
" <i>e.</i>	Prof. Everett	Legal Institutions of the Franks and Anglo-Saxons	2	2 Gr., 10 Di.	12
Music <i>a.</i>	Prof. Paine	Studies in the Comparative History of Religions	2	6 Se.	6
" <i>b.</i>	Prof. Paine	Canon and Fugue (study and composition)	3	7 Se.	7
Mathematics <i>a.</i>	Prof. Peirce	Instrumental Music (Rondos, Nocturnes, Sonatas, and other free forms)	1	1 Se.	1
Physics <i>a.</i>	Prof. Peirce	Gauss's Theoria Motus, Book I.	1	1 Se.	1
" <i>b.</i>	Prof. Trowbridge	Experimental Physics, with Laboratory work	3	2 Se., 2 Sci.	4
Chemistry <i>a.</i>	Prof. Trowbridge	Maxwell's Electricity and Magnetism	2	2 Bussey	2
Natural History <i>a.</i>	Dr. Mark	Agricultural Chemistry	1	1 Gr., 2 Sci.	3
" <i>b.</i>	Prof. Farlow	Embryology, with Laboratory work. (Attended for a part of the year by six students)	3*	1 Gr.	1
" <i>c.</i>	Prof. Farlow	Anatomy and Development of Higher Cryptogams	3†	1 Gr.	1
" <i>d.</i>	Prof. Slade	Anatomy and Development of Fungi and Algae	4	4 Sp.	4
" <i>f.</i>	Prof. Slade	Anatomy and Histology of Domestic Animals, with exercises in Dissection †	4		

* First half year.

† Second half year.

‡ From November 1, to May 1.

twenty-eight, of whom three have withdrawn, or suffered their candidacy to lapse, and twenty-five are still candidates. Two of these twenty-five candidates were admitted to the degree of A.M. at the last Commencement.

One person was admitted to candidacy for the degree of S.D. ; and the number of candidates for that degree was five, of whom one attained the degree, and four are still candidates.

The names of those members of the Graduate Department who received degrees at Commencement, 1882, are as follows : —

A.M.

Le Baron Russell Briggs, A.B., 1875.
 Edward Southworth Hawes, A.B., 1880.
 John Norton Johnson, A.B., 1881.
 Charles Henry Morss, A.B., 1880.
 Charles Robert Sanger, A.B., 1881.
 Frank Webster Smith, A.B., 1877.
 Edmund Allen Whitman, A.B., 1881.

S.D.

LEONARD PARKER KINNICUTT, S.B. (*Mass. Inst. Technol.*), 1875.

Department, Physics. *Subject*, Chemistry. *Thesis*, "The Formation of Phenyl-glyceric Acid from Cinnamic Acid Bibromide."

The Parker Fellowships were held by

Joseph Silas Diller, S.B., 1879,
 Frank Hugh Foster, A.B., 1873,
 Washington Irving Stringham, A.B., 1877,
 (Ph.D. *Johns Hopkins Univ.*), 1880,
 George Lincoln Walton, A.B., 1875, M.D. 1880 ;

and the Kirkland Fellowship by

Paul Shorey, A.B., 1878.

Mr. Foster resigned his fellowship at the end of the academic year, after having been nominated for reappointment. All the other incumbents were reappointed ; and

Edward Emerson Phillips, A.B., 1878, Ph.D., 1880,

was appointed to a Parker Fellowship, for the year 1882-83, in place of Mr. Foster.

After the close of the academic year, Dr. Stringham resigned his fellowship, in consequence of his accepting an appointment to the principal Professorship of Mathematics in the University of California. He had held his fellowship for two years, during which he had carried on important studies at the University of

Leipzig. He was most desirous to defer entering on his new professorship, so as to complete his plan of work by remaining abroad another year; but he found it impossible to effect this arrangement.

Frank Nelson Cole, A.B. 1882, has been appointed to a Parker Fellowship, for the year 1882-83, in place of Dr. Stringham.

A new fellowship was instituted in the course of the year by the gift of friends of the University, to be named the "James Walker Fellowship," in memory of the late President Walker, and to be given, by preference, to a student of those branches of Intellectual and Moral Philosophy to which Dr. Walker devoted his life. This fellowship was awarded for the year 1882-83 to

Benjamin Rand, A.B., 1879, A.M., 1880.

The prize offered by Mr. Robert Noxon Toppan (A.B., 1858), in the year 1879-80, for the best essay on some subject in political science, was awarded, at the close of this year, to

Frank William Taussig, A.B., 1879,

a candidate for the degree of Ph.D., for his essay on "Protection to Young Industries as applied in the United States."

The Academic Council voted, Oct. 21, 1881, to recommend to the Corporation and Overseers to alter section 5 of the Standing Rules relating to the degrees of A.M., Ph.D., and S.D., so as to make it read as follows: —

"5. The Academic Council will recommend for the degree of Master of Arts candidates otherwise properly qualified, who, after taking the Bachelor's degree, shall pursue for at least one year at the University a course of liberal study approved by the Council, and shall pass with high credit an examination on that course. The Council will designate from time to time those courses of instruction in the Professional and Scientific Schools which will be accepted for the degree of A.M."

The Council also voted to recommend the repeal of section 6 of the Standing Rules.

These recommendations were adopted by the Corporation and Overseers, with a slight verbal alteration.

JAMES MILLS PEIRCE, *Secretary of the Academic Council.*

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Dean of the Theological Faculty, I respectfully submit the following Report for the academic year 1881–82:—

Thirty-two students were connected with the School during the year, as follows:—

Resident Graduates	4
Senior Class	5
Middle Class	4
Junior Class	8
Special Students	11

Of these, two resident graduates and one member of the middle class left early in the year, so that the number of students was practically twenty-nine. Three undergraduates recited in Hebrew, two candidates for the degree of A.M. attended the lectures on Comparative Religion, and one those on Systematic Theology.

The nature and amount of the work of the School may be learned from the accompanying table, pp. 82, 83.

The theological instruction of the School was this year supplemented by a course of twelve lectures by Alexander McKenzie, D.D., on the Theology of the New Testament. These lectures were not only valuable in themselves, but were important as presenting the subjects treated from a point of view different from that occupied in the regular course on Systematic Theology. They may serve to illustrate the plan of the School by showing the breadth of instruction which it would gladly give if it were able. Meanwhile, such a course given every year, by representatives of different types of Theology, cannot fail to be instructive and stimulating to the students who attend them.

I express with pleasure the indebtedness of the School to Joseph Henry Allen, A.M., who for four years has filled the position of lecturer on Ecclesiastical History. During this time he identified himself with the School, giving to it the full advantage of his varied learning, his industry, and his enthusiasm.

The year has been marked by the addition to the School of two professors — one filling the recently established Winn Professorship of Ecclesiastical History, and the other, the Hollis Professorship of Divinity, which had been so long vacant. Ephraim Emerton, Ph.D., who has been called to the former position,

had already, as instructor in the College, shown himself to be a successful student and teacher in a field of study in part identical with that to which he is now to devote himself.

It would be impossible for any one teacher in these days to perform properly all the duties which were originally assigned to the Hollis Professor. Happily this very breadth of range, which requires a selection from among the functions prescribed, makes it possible, at any time, to use this professorship in such a way as to meet the special needs or opportunities of the School. It has thus, fortunately, been able to secure the services of David Gordon Lyon, Ph.D., who has already distinguished himself as a student of Assyriology. The introduction of this study makes the Semitic department of the University especially strong, and supplies to the students of Theology instruction which late investigations have shown to be very important for the comprehension of the Old Testament. Professor Lyon, also, by taking the Junior class in Hebrew, leaves Professor Toy free to give more lectures on the questions which make the study of the Old Testament so interesting and important at the present day.

The connection of Professors Toy and Lyon with the School may illustrate still further the wisdom and the feasibility of the idea which it represents, by which the range of its possible selection of teachers is made so much larger than that within which most seminaries of Theology are confined.

A new lecture room was constructed in Divinity Hall last summer. This addition was made necessary by the greater number of teachers to be accommodated, and by the fact that most of the lectures are now given early in the day.

It gives me pleasure to record an important change in the requirements for entering the School. Henceforth only graduates of some college, or persons who give evidence of an education equal to that of a college graduate, will be admitted to candidacy for the degree of B.D., while an examination similar to that before required for becoming a candidate for the degree must be passed in order to enter the School as a special student. It is expected that some loss in the number of students may attend the change, but it is believed that this loss will be more than balanced by a greater uniformity of attainment among the students, which will make the teaching of the School more effective. It was felt, also, that it should be the aim of the School to elevate the standard of education in the ministry.

Instructor.	Subjects and Methods of Study.	Number of Students.	Exercises per Week.
	JUNIOR CLASS.		
Prof. Abbot.	New Testament; Textual Criticism of the New Testament; Exegesis of Gospel of Matthew, chapters i.-xiii. Lectures and Recitations. Dissertations by students.	12	2
Prof. Toy.	Hebrew Forms in Davidson's Grammar with written translations from English into Hebrew and from Hebrew into English. Portions of Genesis, Judges, Ezekiel, and Psalms read. Lectures on the Ethics of the Old Testament.	15	3
Prof. Peabody.	Homiletics; Structure and Analysis of Sermons. Lectures.	15	1
Prof. Peabody.	Philosophy of Religion; Lectures.	18	1
Mr. Allen.	Ecclesiastical History, First Period, to end of eighth century; Lectures, with discussions, and constant reference to original authorities.	10	2
Mr. Ticknor.	Elocution. Class exercises.		
	MIDDLE CLASS.		
Prof. Abbot.	New Testament; Exegesis of the Gospel of Matthew, chapters xiv.-xxviii., Critical Introduction to Gospel of John and Exegesis of chapters i.-iv.	6	2
Prof. Everett.	Comparative Religion; Studies of Vedic, Avestan, Buddhist, and Chinese Religions; with constant reference to translations and other works reserved for the use of students.	12	2
Prof. Everett.	Systematic Theology begun; Elements of Religion.	6	1
Prof. Toy.	Biblical Aramaic; Forms in Riggs's Grammar, and Hebrew Syntax in Gesenius. Reading from Daniel, Ezra, the Targums, Amos, Job, and Ecclesiastes. Lectures on Textual Criticism with examination of the text of 1 Samuel.	5	2
Prof. Peabody.	Homiletics; Sermons preached by the students before the two upper classes and criticised by students and teacher.	15	2

MIDDLE CLASS — CONTINUED.

Prof. Peabody.

Mr. Allen.

Mr. Ticknor.

Ethics; Lectures, Discussions, and Essays.

Ecclesiastical History, Second Period, from ninth to fifteenth century inclusive. Chief authorities,

Milman's Latin Christianity and Greenwood's Cathedra Petri. The students were also referred to other sources. — Lectures, Discussions, and Essays.

Elocution. Each student thirty minutes a week.

9

1

5

2

SENIOR CLASS.

Prof. Abbot.

Prof. Everett.

Prof. Toy.

Prof. Peabody.

Prof. Peabody.

Mr. Allen.

Mr. Ticknor.

New Testament; Exegesis of John iii.-xxi.; Critical Introduction to the Epistle to the Romans, and Exegesis of chapters i.-iv.

Systematic Theology; Lectures and Essays.

Old Testament; Lectures on the Formation of the Canon. Reading of Ewald's "Antiquities of Israel."

Homiletics, as in middle year.

Pastoral Care; twelve Lectures, open to all students.

Ecclesiastical History, Third Period, from beginning of sixteenth century to the present time; Lectures and Discussions.

Elocution. Each student forty-five minutes a week.

7

2

7

3

6

1

24

2

6

2

LECTURES TO THE SCHOOL.

Prof. Toy.

Mr. Allen.

Mr. McKenzie.

The Messianic Thought of the Old Testament.

The History of Modern Liberalism in Theology, forming part of the course to the Seniors but open to all students.

The Theology of the New Testament.

Twenty Lectures.

Twelve Lectures.

Twelve Lectures.

GENERAL EXERCISES.

Preaching by some student every Friday evening, open to the public; the sermon submitted in advance to the teacher of Homiletics.

Extempore speaking once in two weeks; with criticism.

Conference meeting, conducted by students, the Faculty being present and taking part, once in two weeks (alternating with the above).

Morning prayers, conducted by students and teachers.

The School has been fortunate in retaining for a third year as Librarian C. J. Staples, B.D., to whose services I made reference last year. Ninety-eight books were added to the Library during the year. Forty-six volumes of a miscellaneous nature were transferred to Gore Hall. In all, one thousand and thirty-seven volumes have been thus transferred. There now remain in the Divinity Library only works relating to the study of Theology. The preparation of the card catalogue has been advanced, and that of a subject catalogue, including references to important articles in the periodicals received, has been begun. The circulation of the year, exclusive of text-books, has been twelve hundred and ten. The Librarian urges the importance of preserving in the Library pamphlets relating to the theological questions of the day. Many of these, which may now seem of small value, will in the future be of great importance, as illustrating the thought and temper of the time. Arrangements have been made for cataloguing pamphlets that may be received.

C. C. EVERETT, *Dean*.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I beg to submit the following Report upon the Law School for the academic year 1881–82:—

The table on pp. 86, 87 gives the courses of study and instruction during the year, the names of the instructors, the text-books used, the number of exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

The following table exhibits the attendance at the School during the last twelve years:—

	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.
Whole number of students in the School	165	138	117	141	144	173	199	196	169	177	161	161
Number that were in the School during the whole year	107	107	109	121	130	153	168	172	137	138	136	139
Number that were in the School only part of the year	58	31	8	20	14	20	31	24	32	39	25	22
Average number	136	123	113	131	137	163	184	183	154	157	149	146

The following table exhibits the School as divided into classes since the establishment of the three years' course and the examination for admission : —

	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.
First Year	72	63	78	57	61
Second Year	79	50	32	58	41
Third Year. . . .	—	—	21	14	25
Special Students. .	31	47	46	32	34

In regard to the foregoing table, it is to be observed that, although the three years' course went into operation at the beginning of 1877-78, there was no third-year class until 1879-80. It is also to be observed that the second-year class of 1877-78 did not take the three years' course, but was graduated at the end of the second year, that class having entered the School before the three years' course went into operation.

The following table exhibits the results of the examinations for admission in each year since they were established : —

	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.
Offered	16	15	18	25	19
Admitted	7	7	12	13	16

The following table exhibits the results of the examinations for a degree in each year since the establishment of the three years' course : —

	1877-78.			1878-79.			1879-80.			1880-81.			1881-82.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year .	66	51	15	50	42	8	73	69	4	45	43	2	49	44	5
Second Year	66	47	19	40	39	1	28	26	2	49	46	3	38	37	1
Third Year .							22	18	4	18	18	0	36	33	3

Instructors.	Studies and Text-books.	Exercises per week.	Number of students examined.
	FIRST YEAR.		
Prof. Gray.	Real Property. No text-book.	2	48
Prof. Langdell.	Contracts. Langdell's Cases on Contracts.	3	56
Mr. Howland.	Torts. Ames's Cases on Torts.	3	49
Prof. Thayer.	Criminal Law and Criminal Procedure. No text-book.	1	49
Prof. Ames.	Civil Procedure at Common Law. Ames's Cases on Pleading.	1	48
	SECOND YEAR.		
	HONOR COURSE.		
Prof. Thayer.	Evidence. No text-book.	2	27
Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading.	2	27
Prof. Gray.	Property. No text-book.	2	27
Prof. Ames.	Trusts and Mortgages. Ames's Cases on Trusts.	2	27
	ORDINARY COURSE.		
	<i>Elective Subjects.</i>		
Prof. Thayer.	Evidence. No text-book.	2	19
Prof. Langdell.	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading.	2	4
Prof. Gray.	Property. No text-book.	2	18
Prof. Ames.	Trusts and Mortgages. Ames's Cases on Trusts.	2	10
Prof. Thayer.	Sales of Personal Property. Langdell's Cases on Sales.	2	8
Prof. Ames.	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.	2	6

THIRD YEAR.

HONOR COURSE.

Required Subjects.

Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction.
Partnership and Corporations. Ames's Cases on Partnership.

1
2

13
13

Elective Subjects.

Sales of Personal Property. Langdell's Cases on Sales.
Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.
Conflict of Laws. No text-book.
Constitutional Law. No text-book.
Agency and Carriers. No text-book.
Wills and Administration. No text-book.
Jurisprudence. Austin on Jurisprudence.

2
2
1*
1†
1
1
1
1

13
11
4
4
10
9
7
7

ORDINARY COURSE.

Elective Subjects.

Jurisdiction and Procedure in Equity. Langdell's Cases on Equity Jurisdiction.
Partnership and Corporations. Ames's Cases on Partnership.
Sales of Personal Property. Langdell's Cases on Sales.
Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes.
Conflict of Laws. No text-book.
Constitutional Law. No text-book.
Agency and Carriers. No text-book.
Wills and Administration. No text-book.
Jurisprudence. Austin on Jurisprudence.
Trusts and Mortgages. Ames's Cases on Trusts.
Jurisdiction and Procedure in Equity (2d year). Langdell's Cases in Equity Pleading.

1
2
2
2
2
1*
1†
1
1
1
2
2

6
19
17
17
2
2
2
12
15
6
1
2

* For the first half of the year.

† For the last half of the year.

Prof. Langdell.
Prof. Ames.

Prof. Thayer.
Prof. Ames.
Prof. Gray.
Prof. Thayer.
Prof. Thayer.
Prof. Gray.
Prof. Gray.

Prof. Langdell.
Prof. Ames.
Prof. Thayer.
Prof. Ames.
Prof. Gray.
Prof. Thayer.
Prof. Thayer.
Prof. Gray.
Prof. Gray.
Prof. Ames.
Prof. Langdell.

In regard to the foregoing table, it is to be observed that it includes no special students, and hence that all the applicants included in it were either graduates of colleges, or had passed the examination for admission. Of course this remark does not apply to the second-year class of 1877-78, and this accounts in part for the much greater number of failures in that class.

The following table exhibits the number of students who, since the establishment of the three years' course, have been examined for a degree in the studies of any year without having been members of the School during that year : —

	1877-78.			1878-79.			1879-80.			1880-81.			1881-82.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
First Year . .	5	2	3	3	2	1	6	4	2	6	4	2	2	1	1
Second Year .							1	1	0						
Third Year .							5	4	1	4	4	0	10	8	2

The following table exhibits the results of the examinations for the honor degree in each year since it was established : —

	1878-79.			1879-80.			1880-81.			1881-82.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
Second Year .	26	12	14	17	7	10	39	16	23	27	11	16
Third Year .				9	7	2	5	3	2	13	10	3

The following table exhibits the number of students who have entered the School in each year during the last twelve years, and shows how many of them were graduates of colleges, and, of the latter, how many were graduates of Harvard and how many of other colleges.

	1870-71.	1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.
Whole number of entries	105	92	87	95	102	119	128	111	102	124	91	97
Graduates of colleges	60	56	47	58	55	67	77	79	62	76	60	53
Harvard graduates .	19	26	22	29	40	39	47	47	38	59	41	29
Graduates of other colleges	41	30	25	29	15	28	30	32	24	17	19	24
Non-graduates . . .	45	36	40	37	47	52	51	32	40	48	31	44

C. C. LANGDELL, *Dean.*

TO THE PRESIDENT OF THE UNIVERSITY :

SIR, — As Dean of the Medical Faculty, I submit the following Report upon the Medical School for the academic year 1881-82 :

The whole number of students in attendance during the year was two hundred and fifty; during the first term two hundred and forty-six; during the second two hundred and thirty-five. Of these, one hundred and twenty-eight had a literary or scientific degree. There were ninety-five applicants for the degree of Doctor of Medicine, of whom eighteen were rejected. Seventy-seven passed the examination and received their degrees. The Baringer Scholarships were awarded to Henry Fiske Adams and Henry Austin Wood of the Fourth Class. The other Scholarships were awarded to John Abbott Crosby and Alton Atwell Jackson of the Third Class, and Oscar Joseph Pfeiffer and Leonard Wood of the Second Class.

The Fourth Class was composed of ten students, of whom nine passed the examination, five of these *cum laude*; three received hospital appointments; one took the ordinary degree of M.D.; one postponed graduation to become a candidate for a hospital.

The remarks made in the last Report with regard to the fourth year might be repeated in this. It is still too early to determine the results of this additional effort to improve medical education. We can only say that, if expressed intention of prolonging the term of study be an index of progress, progress has been made. The chief difficulty still remains: we are in competition with the hospitals, which claim an important number of the best students, before they have completed a proper course of study.

COURSES OF INSTRUCTION FOR 1881-82.

Instructors.	Subjects.	Exercises per Week.
FIRST CLASS.		
Prof. Holmes	Descriptive Anatomy	Four till May.
Drs. Beach, Waterman, M. H. Richardson, and Otis	Practical Anatomy, with Exercises in Dissection	Fifteen, January till May.
Drs. Dwight & Quincy	Laboratory Exercises in Histology	Two till May.
Dr. C. S. Minot	Embryology	Twelve Lectures.
Prof. Bowditch	Systematic and Experimental Physiology	Four.
Dr. J. W. Warren	Laboratory Exercises in Experimental Physiology	November till May.
Dr. Hills	General and Analytical Chemistry	Two, with ten additional exercises.
Dr. Hills	Practical Exercises in the Laboratory for General Chemistry	Six.
SECOND CLASS.		
Dr. Dwight	Topographical Anatomy	One.
Drs. Beach, Waterman, M. H. Richardson, & Otis	Practical Anatomy, with Exercises in Dissection	Five till May.
Prof. Wood	Medical and Toxicological Chemistry	Two.
Prof. Wood & Dr. Emerson	Practical Exercises in the Laboratory for Medical Chemistry	Six.
Dr. Bolles	Materia Medica, with Practical Demonstrations	One.
Prof. Fitz	General Pathology and Pathological Anatomy	Two.
Prof. Fitz	Special Pathological Anatomy, with Demonstrations	Two.
Drs. Cutler & Whitney	Laboratory Exercises in Pathological Histology	Two till April.
Prof. Fitz & Dr. Cutler	Practical Instruction in performing Autopsies	Throughout the year.
Prof. Minot & Edes	Clinical Medicine	Four.
Drs. Mason, Shattuck, & Garland	Practical Instruction in Auscultation and Percussion	Six first half-year.
Dr. Knight	Practical Diagnosis and Treatment of Diseases of the Larynx	Six first half-year.
Dr. Warren	Recitations in Surgical Pathology	One first half-year.
Dr. Warren	Recitations in Surgery	One second half-year.
Dr. Warren	The Application of Bandages and Apparatus	One second half-year.
Drs. Warren & W. S. Bigelow	Laboratory Exercises in Surgical Histology	Two after March.
Prof. Bigelow	Clinical Surgery	Two first half-year.
Prof. Cheever	Clinical Surgery	Two till April.
Dr. Porter	Clinical Surgery	Two second half-year.
THIRD CLASS.		
Prof. Edes	Therapeutics	Three.
Prof. Reynolds	Theory and Practice of Obstetrics	Three.
Dr. W. L. Richardson	Recitations in the Theory and Practice of Obstetrics	One.
Dr. W. L. Richardson	Operative Obstetrics	Twelve practical exercises.
Dr. W. L. Richardson	Practical Instruction in Clinical Obstetrics	Throughout the year.
Prof. Minot & Dr. Whittier	Theory and Practice of Physic	Five.
Prof. Minot & Edes	Clinical Medicine	Four.
Prof. Bigelow	Surgery and Clinical Surgery	Two first half-year.
Prof. Cheever	Clinical Surgery	Two till April.
Dr. Porter	Surgical Anatomy and Operative Surgery	Fifteen practical exercises.
Drs. Porter & Otis	Operative Surgery	One.
Prof. Williams	Diseases of the Eye	One till January and after March.
Prof. Williams	Clinical Ophthalmology	One.
Prof. White	Diseases of the Skin	One.
Prof. White	Clinical Dermatology	Two.
Dr. Baker	Gynaecology	Two.
Dr. Baker	Clinical Gynaecology	Two second half-year.
Dr. Davenport	Clinical Gynaecology	Two first half-year.
Dr. Greenough	Practical Diagnosis and Treatment of Syphilis	One.

COURSES OF INSTRUCTION. — CONTINUED.

Instructors.	Subjects.	Exercises per Week.
THIRD CLASS. — CONTINUED.		
Dr. Green	{ Practical Diagnosis and Treatment of Diseases of the Ear	One, January till April.
Dr. Blake	{ Anatomy, Physiology, and Diseases of the Ear	Two for three months.
Dr. Oliver	{ Practical Diagnosis and Treatment of Diseases of Children	One first half-year.
Dr. Rotch	{ Practical Diagnosis and Treatment of Diseases of Children	One for six months.
Dr. Webber	{ Practical Diagnosis and Treatment of Diseases of the Nervous System	One till February.
Dr. Putnam	{ Practical Diagnosis and Treatment of Diseases of the Nervous System	One.
Dr. Folsom	Mental Diseases	Eight Lectures.
Dr. Draper	Forensic Medicine, with Demonstrations	Twelve Exercises.
FOURTH CLASS.		
Dr. Draper	Clinical Medicine	One.
Dr. Garland	Clinical Medicine	One.
Dr. Mason	Clinical Medicine	One for three months.
Dr. Warren	Clinical Surgery	One, three in October.
Dr. Porter	Clinical Surgery	One after February.
Drs. Porter & W. S. Bigelow	{ Operative Surgery	Practical Exercises.
Dr. Bradford	Orthopedic Surgery	Two after March.
Prof. Reynolds	Obstetrics	One.
Dr. W. L. Richardson	Clinical Obstetrics	Two for six months.
Dr. W. L. Richardson	Operative Obstetrics	Practical Exercises.
Prof. Williams	Clinical Ophthalmology	Two for six months.
Dr. Wadsworth	Ophthalmoscopy	One for four months.
Prof. White	Dermatology	One.
Prof. White	Clinical Dermatology	Three.
Drs. Baker & Davenport	Clinical and Operative Gynaecology	Six.
Dr. Chadwick	Clinical Gynaecology	Three.
Drs. Oliver & Rotch	Diseases of Children	Three.
Drs. Webber & Putnam	{ Diseases of the Nervous System	Two.
Dr. Folsom	Mental Diseases	One.
Dr. Knight	Laryngology	Three for two months.
Dr. Blake	Otology	Two for three months.
Dr. Green	Otology	Two for three months.
Dr. Draper	Forensic Medicine	One.
Dr. Harris	Forensic Medicine	Demonstrations.
Dr. Greenough	Syphilis	Two.
Dr. Homans	Ovarian Tumors	{ Six lectures; Clinical Exercises.
Boston Cooking Sch'l	Cookery	Six Exercises.

The table on pages 90, 91 shows the amount and character of the instruction given. The results of the examinations for admission to the School are given in the following table: —

		Physics.	Latin.	English.	Elective.	Rejected.
1882.	{ June	{ Offered	21	22	21	21
		{ Conditioned	5	9	4	6
	{ Sept.	{ Offered	23	22	22	19
		{ Conditioned	8	10	1	1

In the following table will be found a statement of the rejections at the annual examinations in June for four years past.†

JUNE EXAMINATIONS.—STATISTICS OF REJECTION.

FIRST CLASS.										SECOND CLASS.						THIRD CLASS.																						
Anatomy.			Physiology.			General Chemistry.			Medical Chemistry.			Materia Medica.			Path. Anatomy.			Topo. Anatomy.			Theory and Practice.			Clinical Medicine.			Surgery.			Clinical Surgery.			Therapeutics.			Obstetrics.		
	Per ct.			Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.				
1879 { Passed Rejected	73	17	59	37	33	52	64	14	57	17	59	15			56	0	64	1	58	3	60	1	57	11	51	9	15											
	Total	88	95		69	74	75		74		70				56		65		61		61		68		60													
1880 { Passed Rejected	77	16	81	25	52	22	46	19	70	13	62	15			58	13	53		65	1	59		56	13	56	9	13											
	Total	92	108		67	83			83		73				67		63		66		70		69		65													
1881 { Passed Rejected	58	12	42	31	37	21	70	11	69	15	77	12			74	6	67		73	3	77	1	82	8	66	14	17											
	Total	66	61		47	84			84		88				79		83		76		78		90		80													
1882 { Passed Rejected	60	14	62	17	38	20	64	9	46	15	54	16			74	10	82		82	2	80	3	64	5	69	15	17											
	Total	70	75		48	61		71	61		65				83		87		84		83		69		84													

FOURTH CLASS.																																	
Ophthalmology.			Dermatology.		Gynaecology.		Obstetrics.		Clinical & Operative Obs.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Forensic Medicine.		Otology.		Laryngology.		Syphilis.		Operative Surgery.								
1881 { Passed Rejected	9	0	7	22	8	11			7	22	9	0	9	0	9	0	9	0	8	1	9	0	9	0	9	0	0						
	Total	9	9	9		9			9		9		9		9		9		9		9		9		9								
1882 { Passed Rejected	7	12	7	0	7	0	6	14	6	14	7	0	6	14	6	14	7	0	8	0	7	0	7	0	8	0	0						
	Total	8		7		7		7			7		7		7		7		8		7		7		8								

The following table shows the increasing recognition of the necessity of studying medicine where it can be taught:—

NUMBER OF TERMS SPENT AT THE SCHOOL BY GRADUATES.

	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
Spent six terms	8	22	14 47%	25 69%	40 65%	41 85%	62 88%	39 86%	49 81%	79 91%
Spent five terms	3	2	7	5 13%	9	4	2 2%	1 2%	6 10%	2 2%
Spent four terms	8	6	6	4 11%	8	3	3 4%	4 8%	4 6%	4 4
Spent three terms	15	5	0	2 5%	1	0	2 2%	0	1 1%	0
Spent two terms	7	3	3 10%	0	3	0	1 1%	1 2%	0	1 1%
Total graduated	41	38	30	36	61	48	70	45	60	86*

* Includes nine students of the Fourth Class.

We are now able to announce the approaching completion of the new building, which has for so many years been mentioned as one of the great wants of the School. It will probably be ready for occupancy in the spring.

CALVIN ELLIS, *Dean*.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR, — I beg leave to submit my Report upon the Dental School for the year 1881-82:—

The number of students was twenty-one, — eleven in the first-year class, nine in the second-year, and one in the third-year.

The first-year students attended lectures with the Medical Students of the same year, and with them passed the same examinations. Such as cannot pass two of the three examinations of this year are not allowed to go on with the class to the next year's studies, but must go over the work of the first year again. Of such failures there were four. The studies were General Anatomy, Physiology, and General Chemistry.

The students of the second and third year also attended as a part of their course, in connection with the Medical Students, twelve lectures in Surgical Pathology, given by the Professor of Clinical Surgery.

The Professor of Operative Dentistry has lectured one hour each week on the theory and methods of his specialty, and the Clinical Instructors, each taking in turn one afternoon, have given five afternoons a week throughout the year to practical teaching in this branch of dentistry. The instruction is given in the out-patients department of the Massachusetts General Hospital, which has furnished the usual surplus of patients, so that a choice of operations and a great variety of instruction have been possible. The demonstrator, with one of the instructors, is always present to superintend the operations in this infirmary, and to give such advice and assistance as may seem to be required. Occasional clinics have also been given.

The Professor of Mechanical Dentistry has given two hours of each week to lectures and clinical instruction in the laboratory. The demonstrator in this Department has been present every morning of five days in each week for instruction. In this, as in the Operative Department, patients have been sufficiently numerous to give all students abundant and varied opportunities for practice.

Drs. Virgil C. Pond and George F. Grant, the demonstrators respectively of Operative and of Mechanical Dentistry, have worked with eminent faithfulness and success.

Dr. Charles A. Brackett, Assistant Professor in Dental Therapeutics, has given twenty-seven hours of instruction in his course. He reports that he has kept up the system of devoting the first ten minutes of each hour to a "quiz" upon the prominent points of the preceding lecture, being satisfied that facts and principles become more firmly fixed by this procedure.

Dr. Charles S. Minot has devoted three consecutive hours of each week to instruction in Oral Surgery and Pathology, including the use of the microscope and the preparation of sections. He reports a more systematic instruction in the Laboratory, a special appropriation enabling him to add several valuable specimens to the collection, and four new microscopes and other important implements to the equipment. The students showed a marked improvement over previous years, confirming the belief in the utility of these exercises, for which a more complete and definite provision seems desirable. At the end of the year, to our great regret, stress of other duties compelled Dr. Minot's resignation.

Out of seven students examined, three attained their degree.

The resignation of the Professor of Operative Dentistry, from pressure of business, was handed in at the close of the year. Dr. Shepard has been connected with the School from its origin, first as assistant professor, and, since the resignation of Dr. Moffatt, as professor, and has identified himself with the Operative Department. His loss enforces the pressing impecuniousness of the School, which, for want of money, is unable to retain experienced officers who can no longer afford to give the gratuitous service which the School demands. With the exception of the Demonstrators, every instructor in the School gives his services, and its existence depends on their unselfish devotion. Already, in the fourteen years of its existence, the School has lost from this cause two professors, one adjunct professor, three instructors who filled the places and performed the work of professors, and numerous clinical instructors. Further comment upon the pecuniary needs of the School seems unnecessary.

THOMAS H. CHANDLER, *Dean.*

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR: I have the honor to submit the following Report upon the Lawrence Scientific School for the academic year 1881-82:—

The number of students registered during the year was thirty-one. They were classified as follows:—

	1881-82.	1880-81.
I. Engineering	6	4
II. Chemistry	0	0
III. Natural History	6	5
IV. Mathematics	1	1
Special Courses	18	31
Total	31	41

It will be seen that there is a gain in Engineering and Natural History, and a loss in special students. Represented by percentage, Engineering gained fifty, Natural History twenty, and special courses lost about forty-two.

In my last Report I suggested that the removal, by the College, of the restriction of age, as regards unmatriculated students, would naturally diminish the number of our special students. The result has verified this anticipation. There are always a

few students pursuing advanced courses of study, particularly in Natural History. Some of these, learning by experience the great opportunities for research offered by the University, and proving by their zeal and by their attainments that they know how to make use of them, are advised by their instructors to change their status from special to regular pupil. They enter with advanced standing, and take their degree in course. The graduates in the department of Natural History are largely recruited from this class. But, if we except these students, and another small class, who, unable to pass the entrance examinations, are studying to enter at a future time, it is difficult to assign a reason why, under the present relation of special students to the College, we have any special students. Their number ought to decrease from year to year.

The thirty-one students above enumerated attended the exercises of thirty-six different instructors. The whole number of courses taken, prescribed and elective, was one hundred and forty-four, an average of four and six tenths to each pupil. This, however, does not represent all the work of the School. Undergraduates of the College are now allowed to elect, either in course, or as extras, or by special petition, all the courses of the Engineering Department of the Scientific School, and all of these courses have been attended by undergraduates of the College during the past year. The Bussey Institute can send its students here to learn surveying and mechanical drawing. College students can take these two studies as extras, and by petition they are allowed to take the courses in Calculus and Mechanics, each of which, being five hours a week, counts as two college courses. The course in Mechanics is elected either by graduates who are candidates for a higher degree, or by those who intend after graduation to enter the Engineering department of the School. To the latter class, this course is especially recommended. The great difficulty with which we have to contend is to concentrate the time and attention of the student sufficiently upon his technical study. In his extended course, his specialty becomes only one item; his mental energies are frittered away over a multiplicity of subjects, and thoroughly devoted to none. If, during his undergraduate course in the College, he can cover the ground of all his preparatory studies, he will enter upon his technical course, after graduation, under the most favorable auspices.

Nothing is left to distract his attention from his technical studies : he will enter his course with all the advantages of a college training, and the best results may be expected.

Two degrees were conferred at Commencement, — one in Engineering, and one in Natural History.

H. L. EUSTIS, *Dean*.

TO THE PRESIDENT OF THE UNIVERSITY : —

SIR : During the year 1881–82, seven students were instructed at the Bussey Institution. Two of them were in regular standing, while the others devoted themselves particularly to horticulture and botany. One student received the degree of Bachelor of Agricultural Science at Commencement.

Lectures, recitations, and practical exercises in Agriculture and Horticulture, and in Zoölogy, Chemistry, and Botany as applied to Agriculture, were given by Messrs. Motley, B. M. Watson, Slade, Storer, C. E. Faxon, and Ford. The course in Entomology, usually given in the spring by Mr. Burgess, was omitted this year because it happened that both the regular students, of whom it would naturally be required, had received this instruction in the previous year.

F. H. STORER, *Dean*.

TO THE PRESIDENT OF THE UNIVERSITY :

SIR, — We have had the generous support of the same gentlemen named in my last Report (Messrs. Charles P. Curtis, William B. Weedon, Henry Lee, Alexander Agassiz, and Charles S. Sargent), in sustaining the publication of the University Bulletin for another year. The chief bibliographical contributions of the year, including those of previous years which have been concluded, are as follows :

1. *Historical Hydrography of the Handkerchief Shoal in the Bahamas*, by William H. Tillinghast, of the class of 1877, — a piece of thorough work, growing out of studies on the mooted question of the landfall of Columbus, and indicative of the richness of the Library's collection of maps, which in the main afforded the material of the Essay. It has since been issued as No. 14 of our *Bibliographical Contributions*.

2. *A Bibliography of Fossil Insects*, by Samuel H. Scudder, the Assistant Librarian. This was not wholly concluded during the year; but the type being set, a separate publication of it was made in advance of its completion in the Bulletin for October, 1882. As Mr. Scudder is recognized as the leading authority on this subject in the United States, and has added to his entomological studies a training in bibliographical research, the *Contribution* (No. 13 of the series), has peculiar claims for consideration.

3. *Calendar of the Arthur Lee Papers*. The enumeration of the contents of the seven volumes, as arranged by the late Mr. J. W. Harris, has been printed in full; but a package of unassorted papers sufficient to make an eighth volume has been found, and the publication of the *Calendar* will accordingly be resumed in the coming year.

4. *A List of the most Useful Reference Books*, by the Librarian. This series has been begun, the initial section covering in part an enumeration of chronological and allied Dictionaries and Manuals.

5. *Classified Index to the Maps in Petermann's Geographische Mittheilungen*, 1855-1881, by Richard Bliss, jr., of the United States Geological Survey. This useful key has been begun, and will add considerably to the value of the journal in question.

6. *List of American Authors in Geology and Palæontology*, by Professor J. D. Whitney of this University. The first half of this convenient guide appeared in the number for April, 1882, and the conclusion comes in that for October; meanwhile, the whole has been issued as *Bibliographical Contribution* No. 15.

The Librarian emeritus has charged himself with the preparation of the quarterly necrology of the University, which was begun in the April number. I must add that, in making up the University Notes of each number, I have found it much more difficult to secure contributions from the literary than from the scientific portion of the University staff.

I regret to say that ill-health has interfered with the continuous labors of Mr. George F. Arnold, the head of the shelf department, and has finally resulted in his withdrawal from the service. His careful, intelligent, and eminently practical methods in the classification will stand, however, for his successor as a fitting suggestion of the system which is yet to be applied to the science classifications of the library. The following report of the year's

work done by Mr. Arnold under such disadvantageous conditions, has been prepared by his colleague, Mr. W. C. Lane, the present first assistant of the Catalogue department, with the aid of Mr. Frank Carney, Mr. Arnold's chief assistant.

The number of volumes now in place in the new stack is 70,042; the number added to the permanent classification during the year was as follows : —

Classical Philology (last 3 rows)	1,073
Cyclopædias	723
Added to classes previously arranged	2,276
Total	<u>4,072</u>

The rows of Classical Philology as arranged include the subjects Mythology, Inscriptions, Miscellany, Bibliography, and Literary History, Greek and Roman Arts and Sciences, Prosody, and Greek and Roman Philosophy. The Greek and Latin authors follow immediately, and have been collected on the shelves they are to occupy; the books are not yet perfectly arranged, but, as they will remain in their present condition for some time, they have been given temporary numbers, and the cards in the catalogue marked to correspond.

Besides these, about 2,000 volumes of newspapers have been brought together and partly placed in order.

These newspapers have been placed in the new room for newspapers and duplicates, which has been made by remodelling the basement of the original Gore Hall, as explained in last year's Report. The summer just passed did not test severely the freedom of the new room from damp, because of the continued dryness of the weather; but there is little ground for apprehension that less favorable seasons will cause any difficulty.

The limit of the work upon the classification of the collections has now been practically reached, and little can be accomplished except in the way of temporary expedients, till the old part of the building is remodelled, and space is prepared for the classification of the scientific portions of the Library.

The accessions to the University Library for the year, and the present extent of the various departments, are as follows : —

Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) .	6,848	202,021	198,665
Law School	994	20,603	2,817
Scientific School	30	2,376	200
Divinity School	98	16,350	1,672
Medical School	39	2,048	....
Museum of Zoölogy	698	15,532	9,461
Astronomical Observatory . .	164	2,917	5,498
Botanic Garden	50	4,187	2,713
Bussey Institution	217	2,417	854
Peabody Museum	54	615	547
Totals	9,192	269,066	222,427

Of the accessions to the Gore Hall collection, there were added by gift 1,782 volumes and 3,861 pamphlets; and such accessions also include 41 volumes transferred from the Library of the Divinity School.

The Curator of the Peabody Museum adds to his return the following statement: "The Library has been catalogued and all publications not relating to Anthropology have been eliminated. The analytical work and classification is now in progress. Of the photographs and engravings no account has yet been made."

The figures of the Botanic Garden library are from a new count.

The following table shows the use of books at Gore Hall, as compared with the last three years: —

	1878-79.	1879-80.	1880-81.	1881-82.
1. Books lent out	41,296	41,986	45,481	48,194
2. Used in the building	10,921	7,812	11,724	10,498
3. Overnight use of reserved books	7,519	10,506	11,872	12,891
Total (excluding No. 3, which is included in No. 1)	52,217	49,798	57,205	58,692
Cards giving to students temporary admission to the shelves . . . . .	....	60	85	200
Times of use . . . . .	....	340	870	2,542
Officers of instruction reserving books . . .	....	35	38	41
Number of books reserved . . . . .	....	3,330	3,418	4,251

The 200 students using admission cards have been in these departments: History, 49; Science, 26; Art (including music), 22; Literature, 36; Greek and Latin authors, 49; Philosophy, 6; Theology, 4; and Political Economy, 8.

During 36 Sundays (till the long vacation came) 2,067 persons availed themselves of the opportunity of using the Library on those days, which is an average of 57 each Sunday, being an increase of ten over last year. The hours were from one to five o'clock. The highest number on any one day was 91 against 64 last year.

The work of the catalogue department is indicated by the following table, which has been furnished by Mr. Lane : —

	1878-79.	1879-80.	1880-81.	1881-82.
1. Cards put into the Public Catalogue . . .	36,390	35,315	41,215	34,168
2. Cards prepared	20,595	24,887	25,705	18,235
3. Volumes received . . . . .	....	....	7,873	6,848
4. Pamphlets received . . . . .	....	....	....	4,469

The official catalogue (authors only) was begun in 1834, and still contains a large number of titles, which have not been re-catalogued for the public catalogue (authors and subjects), which was begun in 1860. The volumes which remain to be so treated are mostly those presenting difficulties, the easier sort having been earliest attended to. The number (535) whose cards have been added to the public catalogue is only a third of those added last year, since, with a diminished staff, work has been stopped on them.

The cataloguing of pamphlets (1,363) has gone on faster than revision could be applied, and a body of 500 is waiting for this final work. This also has been the result of insufficient help.

The pressure is also increased from the departmental cataloguing now done in Gore Hall, which covered 1,354 volumes and pamphlets for the year, beside the record slips made of books bought for the Greek and English departments, and single newspapers added to old files. By a computation 3,086 volumes and 5,420 pamphlets of recent accessions were uncatalogued on the 30th of September.

These figures indicate the urgent need of increasing the Library force, which by resignation and removal has been largely diminished during the year. The resignation of Miss Annie E. Hutchins, for many years an efficient member of the staff, has thrown the chief burden of the catalogue revision upon Mr. W. C. Lane,

who was transferred from the head of the ordering department. His former place was filled at the same time by the appointment of Mr. W. H. Tillinghast.

The work of revising the public catalogue and adapting it better to the use of the frequenters of the Library, which has been the special charge of Mr. Scudder, the Assistant Librarian, is so well advanced, that we are nearly ready for the notation of classes. Mr. Scudder's Report is as follows:

“The revision of the subject catalogue in the interest of the numerical notation, which we are attempting to engraft upon it, has not proved an easy or a rapid task, as might indeed be supposed from the mere fact that it did not form part of the original purpose of the catalogue. The success, however, of such an attempt seems too clearly an advantage to grudge the labor attending it. As it renders the catalogue inflexible by fixing almost irrevocably even the details of its arrangement, no pains should be spared to make in the first place the whole as perfect as possible. The revision of the old primary subjects has been completed and their number reduced one third, with an actual change which would scarcely be noticed even by one constantly consulting the catalogue. The changes made since the last Report have involved alterations in the headings of about 1,500 cards, and the completion of the work has made the catalogue more consistent, more convenient, and a more efficient guide to the Library.

“On the completion of this revision of the main subjects, a collection was made of about five thousand additional words or compounds, which might be required for headings either in principal or subordinate places. These were sought in various lists of such terms, and particularly in those accompanying recent schemes for the classification of books, in Poole's new *Index to Periodical Literature* (the advance sheets of which were accessible), in a MS. list in the Boston Public Library, and in the ‘branches’ and ‘sections’ of our own subject catalogue. These headings have been entered on separate slips and arranged alphabetically, and will form, when completed, a subject-reference catalogue of all headings and subdivisions, both present and prospective. When revised, the cross references fully entered, and the notation added, it will form an invaluable adjunct to the catalogue department, and serve as the basis of the complete index to our subject catalogue, which has been contemplated from its formation, and which

it is hoped one day to print, to enable the tyro to consult the catalogue as readily as the adept.

“ A preliminary revision is already advanced and will probably be completed at an early day. The notation will then be determined on for all the main headings, and before the end of the calendar year it is hoped to apply it to the furthest details of some one subject, to be followed by others as rapidly as is consistent with accurate revision.”

The Library still continues to have charge of the issue of the weekly *Calendar* of the University.

JUSTIN WINSOR, *Librarian*.

TO THE PRESIDENT OF HARVARD UNIVERSITY: —

SIR: I respectfully submit the following Report on the Botanic Garden for the Academic year 1881-82.

During the past year the Garden has suffered much from the protracted dryness of the season, but the loss has been kept within comparatively narrow limits by the unwearied care of the head-gardener, Mr. William Falconer. The soil of the whole Garden is a stiff clay which has never been systematically under-drained; hence the ground, which is thoroughly drenched by the spring rains, becomes “baked” and very hard to work during even a short period of drought. The amount of water purchased by us throughout the year, for out-door plants as well as for those in the greenhouses, is a burden of expense which ought not to be borne by our funds. The inhabitants of Cambridge are admitted to our grounds and conservatories at all times, and the number of visitors from this vicinity is large and constantly increasing. We encourage their coming, and endeavor to make the Garden not only instructive to those who are interested in Botany, but attractive to all. It is therefore, for all practical purposes, a public park, but with this difference,—the city of Cambridge, in which it is situated, is not responsible for its care. It appears to be a fair request to make of our city government that they remit the charge for the water which we use in the Garden. It is the purpose of the Director to bring the matter to the attention of the proper authorities, feeling sure that a request so reasonable in its character will not be refused.

The Garden is annually cultivating a larger number of plants for the illustration of Economic Botany. It is believed that a still fuller exhibition of the plants, both indigenous and exotic, from which the textile fibres, dyes, tanning materials, drugs, and foods are produced, cannot fail to be of interest and profit to all classes of students in our University.

It is a matter of regret to the Director that the limited size of the lecture-room at the Botanic Garden makes it unadvisable to offer to the students a short course of general lectures on the principal features and phenomena of vegetation. Many undergraduates and professional students, who cannot spare the time to pursue a special course in Botany, might be glad to be placed in possession of the more general facts and principles of the science. But, since the lecture-hall at the Garden accommodates only eighty listeners, such a general course upon our grounds is impracticable. The remoteness of the Garden from the College yard would render it a difficult task to transfer to one of the halls there the living specimens required for illustration. Failing this, it has been thought best to devote a part of the Garden to the exhibition of specimens which display the more striking characters of the structure of plants, and to increase our number of plants useful in the arts.

The recent acquisition of a full suite of specimens of the drugs of the United States Pharmacopœia, and of a large proportion of those which are officinal in other countries, suggests the desirability of offering to medical students a short course on medicinal plants. Two of the existing electives in Botany are taken by the undergraduates intending to enter the Medical School. These electives can now be more fully illustrated than ever before.

No material changes have been made within the year, in any of the greenhouses. They continue to fall out of repair, and the question of their partial or complete reconstruction cannot be much longer deferred with safety. The Director has been unwilling to undertake any rebuilding until the funds for the support of the Garden are more ample. Although by the exercise of great economy the running expenses of the past year have been kept within the assured income, it has been impossible to engage in some much needed improvements without encroaching upon the capital. All rebuilding must therefore wait the result of renewed efforts on the part of the Overseers' Committee on the Botanic Garden.

In 1864, when the Botanic Garden was in extreme need, John Amory Lowell, Esq., at that time a member of the Corporation, gave anonymously the sum of five hundred dollars for immediate use. In the year following he gave one thousand dollars for the same purpose, and a like sum annually thereafter until 1876. In 1879, Mr. Lowell subscribed one thousand dollars to the new fund, for the support of the garden, but subsequently authorized the Director to transfer the amount to the income for the year. The same amount was given the next year. In January, 1882, the following extract from Mr. Lowell's will was received by the Corporation: —

“I give and bequeath to the President and Fellows of Harvard College the sum of twenty thousand dollars to be added to the Massachusetts Fund for the Botanic Garden, on condition that the same shall be named in honor of my Grandfather, Judge Lowell, who by his exertions mainly procured the original subscriptions, the Lowell Fund for a Botanic Garden.”

On the 23d of January, the Corporation voted “that the Massachusetts Fund for the Botanic Garden be hereafter named the Lowell Fund for a Botanic Garden, in honor of the late Judge Lowell, who mainly procured the original subscriptions, and in accordance with a provision made by the subscribers to the Fund for a change of its name under certain circumstances.”

Thus by Mr. Lowell's bequest, there is secured to the Botanic Garden an amount equal to that which it had received annually during a long period of years. The new name of the fund may well be regarded as commemorative of two of the chief benefactors of the Garden. Attention should also be called to the fact that the Herbarium was, in 1864, the recipient of the costly botanical library of Mr. Lowell, and that it has proved to be a very valuable portion of the Herbarium Library.

It gives the Director much pleasure to report that he was authorized by two members of the Garden Committee to purchase in Europe apparatus for our Botanical Laboratory. For about twenty-five hundred dollars he has been able to procure the instruments and other appliances which are absolutely required for certain lines of demonstration and research. In the selection he was greatly aided by the advice and assistance of the professors in many of the German Universities. But it is needless to say that he was largely governed in this selection by a realizing sense

of the scanty space in which the apparatus was to be stored and used.

It is proper to state, further, that means were also provided by another member of the Committee for the careful study of the workings of the Botanical Gardens and Institutes of Germany. The results thus obtained will be presented to the Committee on the Garden. By a minute investigation of the methods employed in the gardens belonging to the Universities many suggestions were obtained which may lead to important changes in the scope of our Garden, by which its efficiency as an educational appliance of the University can be increased, and, at the same time, it can be made more generally useful to the public from which it has already received a portion of its funds and to which it may confidently look for more.

From the memoranda of the Curator of the Herbarium, it appears that 8760 plants have been added during the year. The accessions to the Botanical Library of the Herbarium have been as numerous as in the previous year.

During the absence of the Director, the general supervision of the Garden was placed in the hands of Professor Gray and Mr. Sereno Watson. By their care, and by the energy of the head-gardener, the Garden has continued to improve in many directions. That these improvements may be carried on still further, and that others quite as important may be undertaken, our funds must be increased. It is the intention of the Committee on the Garden to resume at an early day their solicitation for this purpose.

GEORGE LINCOLN GOODALE, *Director*.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—As Director of the Chemical Laboratory, I have the honor to present the following Report for the academic year 1881-82:—

During the past year the Director was absent in Europe, and the courses of instruction in the Laboratory were distributed as follows: The course of elementary lectures on general chemistry to the Freshman class was delivered by Professor Jackson in place of the Director; the course on descriptive chemistry (Chem-

istry I. of the elective courses of the College) was as usual conducted by Professor Jackson, with the assistance of Dr. Mabery during the practical exercises in the Laboratory; the course on Mineralogy (Chemistry II.), usually in charge of the Director, was given wholly by Dr. Melville; the course on qualitative analysis (Chemistry III.) was given as heretofore by Assistant Professor Hill, with the assistance of Dr. Mabery in the laboratory work; the course on quantitative analysis (Chemistry IV.), usually in charge of the Director, was given wholly by Dr. L. P. Kinnicutt; the course on organic chemistry (Chemistry V.) was given as in past years by Professor Hill; finally, the advanced students (Chemistry VI. and IX.) worked under the special direction of Professor Jackson or Hill. The several laboratories were under the constant oversight of the assistants, — the qualitative laboratory of Dr. Mabery, the quantitative laboratory of Dr. Kinnicutt, the organic laboratory of Mr. Sanger, and the mineralogical laboratory of Dr. Melville. The total number of students occupying desks at the Laboratory was two hundred and thirty-three, and the total number receiving instruction over four hundred and fifty.

The past year was marked by great activity in the scientific work of the Laboratory. Professor Jackson, with Mr. A. E. Menke, published three papers, — two on curcumin, the yellow coloring matter of turmeric; and one on turmerol, the oil which gives its taste and odor to the same well-known vegetable dye-stuff. He proved that vanillin, the flavoring principle of vanilla, could be made from curcumin, and that the latter substance was a diatomic monobasic acid. Besides studying the potassium salts of curcumin, he investigated also its bromine derivatives, as well as its dihydride. Turmerol was proved to be an alcohol derived from a very complex hydrocarbon, and when oxidized by potassic permanganate it was found to yield terephthalic acid. The results of previous observers in regard to these two substances were corrected, and the formulae of the compounds for the first time established; that of curcumin being $C_{14}H_{14}O_4$, and that of turmerol $C_{20}H_{29}OH$.

Researches were undertaken by Professor Hill to elucidate the constitution of mucobromic acid, more especially to determine the position of the two bromine atoms not only in the molecules of this acid, but also in those of the directly related dibromacrylic

and dibrommaleic acids, and in this connection dibromacrylic acid itself was submitted to more careful study than had hitherto been given to this compound. It having been found that potassic nitrite acts with remarkable facility upon mucobromic acid and its ethers, the products thus resulting were partially studied, and a preliminary account of this investigation was published in the "Berichte" of the Berlin Chemical Society. All this work was a continuation of previous work on furfural and some of its derivatives. In connection with these investigations, the following papers were published by Professor Hill:—

1. On Dibromacrylic Acid.
2. On the Relation between Dibromacrylic Acid and Tribrompropionic Acids, in connection with Mr. C. W. Andrews.
3. On certain Tetrasubstituted Propionic Acids, in connection with Dr. C. F. Mabery.
4. On the Constitution of the Substituted Acrylic and Propionic Acids.
5. "Ueber die Einwirkung von Salpetrigsaurem Kali auf Mucobromsaure," in connection with Mr. C. R. Sanger.

A large number of crystallographic determinations and measurements were made by Dr. W. H. Melville, and the results were published in the following papers:—

1. On the Crystalline Form of Cryolite.
2. On the Crystalline Form of White Tourmaline.
3. On the Crystalline Form of Iodide of Arsenic.
4. On the Crystalline Form of a Dichloracrylic Acid.
5. On the Crystalline Form of Tribromacrylic Acid.
6. On the Crystalline Form of Dibromiodiacrylic Acid.
7. On the Crystalline Form of Chlorbromiodiacrylic Acid.
8. On the Crystalline Form of Tetrabrompropionic Acid.
9. On the Crystalline Form of α Dichlordibrompropionic Acid.
10. On the Crystalline Form of β Dichlordibrompropionic Acid.

The first five of these papers were published separately, the last five in connection with papers before mentioned in which the several substances were otherwise described.

Two papers were published by Dr. L. P. Kinnicutt.

1. An indirect Determination of Chlorine and Bromine by Electrolysis.
2. Formation of Phenylglyceric Acid from Cinnamic Acid Dibromide.

The tenth summer course of instruction in chemistry, given in 1882 under the direction of Dr. Mabery, was attended by thirty-three persons, eighteen of whom were teachers in other colleges or in the secondary schools. Both elementary and

advanced instruction was given, and several original investigations were undertaken, two of which were completed.

The action of bromine on the dibromacrylic acid, first described by Fittig and Petri, was studied by Professor Franklin C. Robinson. The composition of the resulting tetrabrompropionic acid was determined by analyses, and some of its more important salts were made and analyzed. Its decomposition products also were submitted to careful study.

An examination was made of the decomposition products of chlortribrompropionic acid. Since chlordibromethylen, the volatile product of this decomposition, proved to be identical with that obtained by Wallack from β -dichloracrylic acid, the chlorbromacrylic acid from which chlortribrompropionic was made would naturally have an analogous constitution. In February, 1882, the following papers were published in the Proceedings of the American Academy upon results which were obtained in the summer of 1881:—

1. On Diiodbromacrylic and Chlorbromiodacrylic Acids. By Charles F. Mabery and Rachel Lloyd.
2. Preliminary Notice on Orthoiodbenzylbromide and its Derivatives. By Charles F. Mabery and Franklin C. Robinson.
3. On Chlortribrompropionic Acid. By Charles F. Mabery and H. C. Weber.

Of the above-mentioned twenty-three papers, published under the general title of "Contributions from the Chemical Laboratory of Harvard College," each one contains a positive addition to knowledge.

During his journey in Europe the Director has added very materially to the means both of instruction and of research. A dynamo-electrical machine with an adequate motor has been placed in the basement of the Laboratory. The apparatus required for investigations in the new branch of the science, called thermochemistry, has been procured. Several hundred valuable specimens have been added to the mineral cabinet, and placed on exhibition in the cases; and a favorable opportunity enabled the Director to procure at small cost several thousand characteristic mineral specimens for the use of students. It has been very difficult hitherto to procure suitable specimens in sufficient number and variety for the large class in mineralogy, and, this want having been thus supplied, the laboratory teaching in this subject will be made more effective.

JOSIAH P. COOKE, *Director*.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — The progress made in the reduction of the past observations has been the distinguishing feature of the last year. The micrometric observations of the large telescope, to the beginning of 1882, have been published, and the volume has been distributed. A large part of it is occupied with the work of my predecessor, the late Professor Winlock, upon double stars, nebulæ, and other objects, including spectroscopic results. The reductions of the zone observations made with the meridian circle from 1871 to 1879 are now approaching completion. The meteorological observations from 1840 to 1880 have been brought together and are nearly ready for publication. The most important piece of photometric work as yet undertaken here has been completed, and the catalogue giving the results of the measures of four thousand stars is now in the hands of the printer. It thus appears that if the present rate of work is maintained, it will not be long before the accumulated observations of the past are reduced and printed, and we may anticipate a publication of our future observations without a delay greater than is needed for their reduction.

The work of the various instruments will now be considered in detail.

EAST EQUATORIAL.

Eclipses of Jupiter's Satellites. — The observations of these eclipses photometrically, begun in 1878, have been continued during the past year. One hundred and eighty-five eclipses have been observed, thirty-two since Nov. 1, 1881.

Objects having singular Spectra. — The search for these objects in previous years has been mainly in regions selected without special system. The heavens have now been divided into sections of equal area, and a rectangle of 5° by 10° in the centre of each has been selected for examination. The twelve regions having centres at declination $+15^\circ$ and right ascension $1^h, 3^h, 5^h$, etc., have all been swept over in this way. Of the twelve corresponding regions having a declination of -15° six have so far been examined. From this systematic search, we may learn in what portion of the heavens we may expect to find objects of interest, and thus justify a more extended examination. The absence of such objects in other regions will also show that a further search in their vicinity is unadvisable. Several minute planetary nebulæ

have been found near the Milky Way, but none at a distance from it. A special search was therefore made last summer in the Milky Way from -30° to $+20^{\circ}$. This resulted in the discovery of seven new planetary nebulae. Most of these objects, although moderately bright, are so minute that they could not be distinguished from stars by an ordinary eyepiece. One of them has hitherto been mistaken for a star, and is given in the catalogues as DM. $+1^{\circ}$ 3979.

Satellites of Mars.—At the last opposition of Mars the satellites were looked for and were repeatedly seen by Mr. Wendell and myself between December 16 and February 24. It thus seems probable that these objects may be seen with our telescope at any opposition of the planet. The observations made of them here on this occasion were entirely photometric. The results were in general confirmatory of those obtained at the oppositions of 1877 and 1879, but the difference between the brightness of Deimos when preceding and when following Mars, which had been formerly noticed, was not now apparent.

Lunar Objects.—The photometric determination, for the Selenographical Society, of the brightness of various points on the Moon, mentioned in the last report, was completed and the results communicated to the Society. They appear in the Selenographical Journal, V. 57. It appeared from this investigation that the scale of brightness in common use by observers of the Moon might be very closely expressed in terms of stellar magnitudes, each degree of the scale answering to the ratio of light equivalent to six tenths of a magnitude.

Double Stars.—As a part of the bibliography noted below, a list has been prepared of the double stars, the variability of whose components has been suspected. The photometer employed in the observations discussed in Volume XI. Part I., is especially suited to observing such objects. The usual methods of detecting variability fail when applied to the double stars. One of the most striking instances in this list is the star θ *Serpentis*, one component of which has been thought to be variable by Dr. Gould. According to our observations on three evenings in 1878, the respective differences in magnitude of its components were 0.5, 0.5, and 1.4. It has been repeatedly measured during the past year with the results 0.4, 0.4, 0.4, 0.5, 0.4, on different evenings. In general each of these numbers is the mean of sixteen settings.

If really variable, the star probably belongs to the Algol class, and this conclusion seems unavoidable unless the wrong star was observed in the last measures in 1878. The measures show the great precision attainable with this form of photometer.

Wedge Photometer. — A modification has been made of Professor Pritchard's wedge photometer which seems to render it especially suitable to the measure of the light of faint stars in zones. The wedge is placed so that the diurnal motion of the stars carries them from its thin to its thick portion, and the time of disappearance is noted. A bar in the unobstructed part of the field serves to determine the position of each star. From 1852 to 1860 the measurement of the positions of the stars from the equator to one degree north formed an important part of the work of the large telescope. The stars in the northern $10'$ of this zone have been arranged in catalogue form, and the necessary preliminary observations have been made by Mr. Searle. Besides determining the light of these objects it is hoped that some interesting cases of proper motion may be detected.

Sawyer's Variable. — A careful study of this interesting star by Mr. Chandler proved that it belonged to the Algol class, and also that its period was only about twenty hours. This gives it the shortest period of any variable star as yet discovered, and only a little more than one third of the period of any other variable of the same class. The variation of light is about three fourths of a magnitude. A long series of observations of the light curve and of successive minima has been made by Mr. Chandler, and gives the period $20^h 7^m 41^s.6$, with a probable error of $1^s.3$.

The comparison stars were measured on ten nights with the meridian photometer, and furnished a means of reducing these observations to absolute light ratios. The light curve has also been determined photometrically by Mr. Wendell and myself. Observations were made on eighteen nights and give a very precise measure of the changes of light.

Comets. — The telegraphic system for the speedy transmission of various data respecting comets, which was mentioned in the last report, has been maintained and extended. The first observation of a new comet which is obtained at this Observatory is now telegraphed to Europe in advance of the elements, and is often found useful by European computers. It has happened in

two cases, those of the comets discovered by Messrs. Wells and Barnard, that the receipt of the position obtained here was the first intimation abroad of the discovery. This led in the case of the Wells comet to the supposition that the discovery had been made at this Observatory, and to guard against similar errors in future, the despatches are now made fuller, giving the facts of discovery as well as the positions. Arrangements have also been made with Mr. Swift, director of the Warner Observatory at Rochester, in accordance with which he forwards information received by him of new discoveries, either for immediate transmission to Europe, or for a previous investigation here.

The four comets, discovered respectively by Swift in 1881, by Wells and Barnard in 1882, and by various southern observers (the great comet of the year), will show the working of this system. In each case, an observation was obtained at this Observatory on the night following the receipt of intelligence of the discovery, and an orbit was computed, telegraphed to Europe, and published by the Science Observer in this country, during the next four days. In two cases, the accurate position obtained here, and telegraphed in advance of the orbit, was published abroad on the day following that on which the news of the discovery reached us. The orbit of Swift's comet sent from this Observatory first announced its discovery to European astronomers, as likewise happened in two cases already mentioned with regard to the first observation obtained here. These first observations were extensively used in the computations made in Europe. Cloudy weather prevented sufficient data for an orbit of the great comet from being secured here in the first few days of its appearance; but, on receipt by telegraph from Europe of one more position, the orbit was computed and telegraphed back within seven hours.

MERIDIAN CIRCLE.

After continuous observations extending over twelve years, Professor Rogers has found it necessary to take a prolonged rest from night work. The interrupted series will be resumed in February, 1883. Meanwhile the instrument has been used in determining the local time. Its constants, including the collimation, the level, the flexure, the reading of the long collimator, and the index error of the circle, have been determined every week.

Excellent progress has been made with the reduction of the observations from 1870 to 1879. These observations will occupy about twelve hundred printed pages, and will fill three volumes of the *Annals*. The subject will probably be divided according to the following plan. The first volume will contain an introduction giving a description of the processes of observation and of reduction, and a discussion in detail of the instrumental constants for the entire period. The tabular values of these constants will be given for each date. The greater portion of this volume will be devoted to a table which will give the mean times of transit, the circle readings, the constants needed in the reduction, and the resulting right ascension and declination of each of the fundamental stars observed. The second volume will contain all the zone observations in journal form. The quantities used in the reduction of the zone stars will also be given in this volume. The third volume will contain the observations of the secondary polar stars observed during the years 1872-73, the observations of a list of stars made at the request of the United States Coast Survey in 1878, and all the miscellaneous observations made previous to 1879. The second part of this volume will contain the final catalogues of the primary stars, of the secondary stars, and of the zone stars reduced to 1875.0

The introduction to the first of these volumes, occupying one hundred and fifty pages of manuscript, is completed and is ready for publication. The data for the body of the work are also complete except the introduction of the newly determined instrumental constants depending directly upon the system given in Publication XIV. of the *Astronomische Gesellschaft*. The preparation of the copy for publication has recently been commenced.

Of the second volume, the reduction of the zone observations to the beginning of the year of observation has been completed, and the copy containing the original data has been prepared for the printer. It occupies about six hundred pages of manuscript. The reduction of the *Durchmusterung* places from 1855 to 1875 is nearly completed. A large part of the reductions of the zone observations are to be examined either by cross checks or by recomputation. All doubtful observations are to be investigated, and the positions are to be reduced from the beginning of the year of observation to 1875.0 by means of manuscript tables.

The only portion of the third volume which is ready for publication is that containing the observations of the Coast Survey Catalogue. This occupies one hundred pages of manuscript. The reduction of the Polar Catalogue with the newly determined instrumental constants, and the formation of the final catalogues, still remains to be made.

MERIDIAN PHOTOMETER.

The measurement of the light of the stars visible to the unaided eye was completed last summer. Over ninety thousand measures were made on about four thousand stars, most of them being observed on from three to six nights. The more important stars were measured more frequently. Four settings were made every evening on each object. A series of estimates by the unaided eye have also been made by three observers for purposes of comparison. The entire work will involve the discussion of several problems of general interest in connection with the light of the stars. Among these may be mentioned the atmospheric absorption. A discussion of about fifteen thousand observations available for this investigation shows that we may assume that the absorption at any altitude, exceeding 15° , equals in stellar magnitudes one quarter of the secant of the zenith distance. This agrees very nearly with the empirical law deduced by Seidel, especially if we apply a correction for the low barometric pressure due to his great elevation. The average deviation of the two laws does not exceed a thirtieth of a magnitude. A special series of eye estimates serves to extend this law to the horizon.

The constancy of the Pole Star is established by the same observations with the photometer. A series of eye estimates was also made to compare the light of the Pole Star with that of other stars of nearly equal brightness near it, and shows that the relative position of two stars to be compared has an important influence in their apparent brightness. After applying a proper correction, the average deviation of the results is reduced to six one hundredths of a magnitude. An extended comparison of the scale of magnitudes employed by previous observers has been made. A reduction of the observations of Sir William Herschel has been effected, and has led to interesting results. His observations of the light of the stars are not only far superior to any

similar work preceding it, but are more precise than most of the subsequent determinations. Their neglect hitherto is partly due to the want of a suitable system of magnitudes by which they might be reduced. This want is supplied by the photometric measures now under consideration. There seems also to have been an impression that the intervals employed by Herschel were so large as to render the observations uncertain. Our reduction shows that the intervals he designated as a period, comma, and dash, do not exceed one, two, and four tenths of a magnitude; and that the average deviation of a single comparison of two stars, expressed in magnitudes, is only 0.25. As this includes the error of our measurements of each star, the difference of each as seen by the eye from its true brightness, and the variation each has undergone during the past century, it is obvious that the errors of Herschel's observations must be very small. We have thus an accurate measure of the brightness of a large part of the lucid stars a hundred years ago. This will be of the utmost value in determining any changes of long period that may take place in their light.

The large meridian photometer announced in my last report has been completed, and work with it begun. Sheets have been written for about ten thousand stars to be observed with this instrument. Over seven thousand measures have so far been made, mainly of the stars in the over-lapping portions of the zones assigned to different observatories engaged in the revision of the *Durchmusterung*. The measurement of the stars adopted as standards for the *Uranometria Argentina* is also in progress.

PUBLICATIONS.

Volume XIII. Part I., of the *Observatory Annals*, was published and distributed in October, 1882. It contains the previously unpublished results of micrometric observations made here to the end of 1881, mentioned in detail in the report of last year.

The printing of Volume XIV. is now in progress. This volume is to contain the results obtained with the first meridian photometer. The part of the work first printed consists of a catalogue of stars visible to the naked eye in this latitude, with their magnitudes as determined by the photometer, by the recent

estimates of the northern stars likewise made here, and by various older series of observations.

The papers mentioned below have appeared during the year as communications from the officers of the Observatory. A few are added to the list which were overlooked in the preparation of the last report.

Report of the Committee on Standards of Stellar Magnitude. By Edward C. Pickering and others. Proc. Am. Assoc. for Advancement of Science, August, 1881; xxx. 1.

On a Convenient Method of expressing micrometrically the Relation between English and Metric Units of Length on the same Scale. By W. A. Rogers and G. F. Ballou. Id. xxx. 116.

On a Method of reducing Different Catalogues of Stars to a Homogeneous System. By W. A. Rogers. Id. xxxi. 11.

On the Performance of a New Form of Level invented by Mr. John Clark of the United States Coast Survey. By W. A. Rogers. Id. xxxi. 14.

New Variable Star in Puppis. By Edward C. Pickering. Astronomische Nachrichten, c. 13.

Elements of Comet *b* 1881. By S. C. Chandler, Jr. Id. c. 121.

Elements and Ephemeris of Comet *e* 1881. By S. C. Chandler, Jr. Id. c. 319.

On the Telegraphic Transmission of Astronomical Data. By S. C. Chandler, Jr., and J. Ritchie, Jr. Science Observer, August, 1881, iii. 65.

Comet *b* 1881. By O. C. Wendell. Id. iii. 81.

Report on the Progress of the Zone Observations. By Edward C. Pickering. Vierteljahrsschrift der Astronomischen Gesellschaft, 1881, xvi. 317.

Letter to the Astronomische Gesellschaft on the Science Observer Code. By S. C. Chandler, Jr., and J. Ritchie, Jr. Id. xvi. 344.

Order of Brightness of Stars. By Edward C. Pickering. English Mechanic and World of Science, November, 1881, xxxiv. 278.

Remarkable Star Spectrum; New Planetary Nebula. By Edward C. Pickering. Science, December, 1881, ii. 581. Copernicus, December, 1881, i. 242.

Geodetic Formulæ. [Second Paper.] By J. Rayner Edmands. Appalachia, December, 1881, ii. 351.

Elliptic Elements of Comet *f* 1881 — Denning. By S. C. Chandler, Jr. Science Observer, December, 1881; iii. 91.

Reply to Inquiries regarding Time Balls. By Edward C. Pickering. Professional Papers of the Signal Service, No. 5, p. 24.

Observations and Elements of Barnard's Comet, 1881, VI. By S. C. Chandler, Jr. *Astronomische Nachrichten*, ci. 57.

Stars with Peculiar Spectra, discovered at the Astronomical Observatory of Harvard College. By Edward C. Pickering. *Id.* ci. 73.

On the Periodicity of Comet (Denning) 1881, V. By S. C. Chandler, Jr. *Id.* ci. 93.

Observations of Comets, 1881, V., and 1881, VIII. By O. C. Wendell. *Id.* ci. 231.

Observations of Comets, 1880, IV., and 1881, II. By O. C. Wendell. *Id.* ci. 299.

The Pleiades. By Edward C. Pickering. *Astronomical Register*, February, 1882, xx. 40.

Variable Stars. By Edward C. Pickering. *English Mechanic and World of Science*, February, 1882, xxxiv. 542.

On the Variability of DM. $+ 23^{\circ} 1599$. By S. C. Chandler, Jr. *Astronomische Nachrichten*, cii. 139.

Photometric Observations of Planets and of Jupiter's Satellite, III., made at the Harvard College Observatory. By Edward C. Pickering. *Id.* cii. 151.

Photometric Observations of the Satellites of Mars, 1881-82. [E. C. Pickering and O. C. Wendell, observers.] By Edward C. Pickering. *Id.* cii. 193.

Erratum in Observations of Comet Wells, 1882. By Edward C. Pickering. *Id.* cii. 223.

On Certain Zodiacal Phenomena. By Arthur Searle. *Id.* cii. 263.

On Sawyer's Variable, DM. $+ 1^{\circ} 3408$. By S. C. Chandler, Jr. *Id.* cii. 371.

On a New Variable Star in the Constellation Cetus. By S. C. Chandler, Jr. *Science Observer*, March, 1882; iii. 105.

The Mountains between Saco and Swift Rivers. [With map.] By J. Rayner Edmands. *Appalachia*, June, 1882; iii. 57.

The Meridian Photometer. By Edward C. Pickering. *Monthly Notices of the R. Astr. Society*, June, 1882, xlii. 365.

Photometric Comparisons of Lunar Objects. By Edward C. Pickering. *Selenographical Journal*, July-August, 1882; v. 53, 57.

On Certain Zodiacal Phenomena. By Arthur Searle. *Science Observer*, July, 1882, iv. 4.

On Sawyer's Variable, DM. $+ 1^{\circ} 3408$. By S. C. Chandler, Jr. *Id.* iv. 11.

Photometric Measurements of Sawyer's Variable (DM. $+ 1^{\circ} 3408$) and its Comparison Stars. By Edward C. Pickering. *Astronomische Nachrichten*, ciii. 61.

New Planetary Nebulæ. By Edward C. Pickering. *Id.* ciii. 95, 165.

Observations of Comets, 1881, III., IV., VI. By O. C. Wendell. *Id.* ciii. 145.

Small Planetary Nebulæ, discovered at the Harvard College Observatory. By Edward C. Pickering. *The Observatory*, October, 1882, v. 294. *The Sidereal Messenger*, October, 1882; i. 139.

Plane *v.* Cylindrical Surfaces. By W. A. Rogers. *Mechanics*, No. 31, p. 90.

A Study of the Problem of Fine Rulings with respect to the Limits of Naked Eye Visibility and Microscopic Resolution. By W. A. Rogers. *Am. Monthly Microscopical Journal*, September, 1882, p. 165.

A Comparison of the Harvard College Observatory Catalogue of Stars for 1875.0 with the Fundamental Systems of Auwers, Safford, Boss, and Newcomb. By W. A. Rogers. *Memoirs of the Am. Acad. of Arts and Sciences*, x. 389–429.

On the Conditions of Success in the Construction of Standards of Length and in their Subdivision into Equal Parts. Read before the American Society of Microscopists at the meeting held at Elmira, N. Y., August, 1882. By W. A. Rogers. *Mechanics*, Oct. 27, 1882, and later.

A Plan for Securing Observations of the Variable Stars. By Edward C. Pickering. Cambridge, 1882. 8°.

On the Period of R Hydræ. By S. C. Chandler, Jr. *Astronomische Nachrichten*, ciii. 225.

Variable Stars. — The bibliography of the variable stars undertaken by Mr. Chandler last year has been nearly completed, so far as the preparation of the list of references is concerned. The catalogue of stars suspected of variability, and the remarks relating to each, are nearly complete. A plan has been prepared for

securing co-operation in the observation of these objects. A pamphlet has been published relating to this matter, and will be furnished to all persons making application for it. It is hoped that many astronomers will be inclined to aid in this work, as observations which if detached might have little value would be most useful as part of an extensive system of observations. The aid of amateurs is especially invited, since the necessary skill is soon acquired and the habit of making observations of permanent utility would often have a value as great as the direct results anticipated. The aid of lady observers is also desired, since much useful work could be done by them at their own homes. Among the many ladies owning telescopes are doubtless some who have the time and inclination, and might, if properly directed, make observations of great value to science. The observations of the light curves of the variable stars of long period have been much neglected, and observations with this object in view are also needed. A number of observers have promised their aid, and by next year I shall hope to report a large amount of useful work accomplished.

MISCELLANEOUS.

Cambridge was not selected by the United States Commission as a station for observing the transit of Venus. This was in some respects unfortunate, as a complete series of observations were made here in 1878 of the transit of Mercury. This was done at the request of the Naval Observatory, with the expectation that we should thus be prepared to observe the transit of Venus at the present time. On the other hand it is extremely doubtful whether the results obtained during the transit will add materially to our knowledge of the distance of the Sun, and the chance of a cloudy day is twice as great as that of a clear one. I regard the expenditure of money on large pieces of routine work, where a result of value is certain to be secured, as more advisable than any large expenditure for observing occasional phenomena, where clouds may prevent the attainment of any result. If clear, the contacts will be observed, with such other facts as can be noted without much previous expenditure of time or money. Photographs might have been taken without the aid of the United States Commission; but, as they would necessarily have been made according to a somewhat different system,

it is doubtful whether they would have added to the value of the whole.

During the past year, no change has occurred in the corps of assistants, which remains as described in the last Report. The buildings and grounds have been kept in good order without alteration, except that an additional flight of steps has been placed near the southwestern corner of the building, to make the path along its southern side more readily accessible. The West Equatorial has been removed from its pier for use in experiments on the horizontal mode of mounting telescopes, and its place is temporarily supplied by an excellent six-inch refractor belonging to Mr. Chandler.

The time service, in general charge of Mr. Edmands, has been carried on successfully as in previous years. The time ball was dropped correctly on three hundred and fifty-nine days, three hundred and seventeen by telegraph and forty-two days by hand. On three days it failed to drop at twelve o'clock, and according to the rule was dropped precisely five minutes later. On two days it was impossible to obtain the signals, and on one day an accident to the machinery rendered it impossible to raise the ball.

FINANCIAL CONDITION.

Having thus considered the scientific work of the Observatory, its present critical financial condition may be stated briefly. The subscription of 1878, which has given us an increase in income of five thousand dollars, expires with the present year. With this, three instruments instead of one have been kept at work, the corps of assistants has been doubled, excellent progress has been made in reducing the observations of the past, and a large number of volumes of annals and brief publications have been issued. An attempt is now being made to secure a fund of one hundred thousand dollars to render permanent this increased rate of work. Over thirty thousand dollars have already been promised conditionally, the principal limitation being that at least seventy-five thousand dollars shall be secured before next September. A failure in this subscription will involve a return to the condition of comparative inactivity which we were previously obliged to maintain. With success, we shall have the means of accomplishing the amount of work to be expected from the stand-

ing of this University, and demanded by the advanced views regarding literary and scientific work held in this part of the country.

EDWARD C. PICKERING, *Director*.

TO THE PRESIDENT OF THE UNIVERSITY:—

SIR,—I have the honor to submit the following Report upon the condition and progress of the Arnold Arboretum during the year ending August 31, 1882.

The City Council of the City of Boston in December, 1881, by a nearly unanimous vote, authorized their Park Commissioners to expend the sum of sixty thousand dollars in buying certain pieces of land adjacent to the Arboretum, on the condition that satisfactory arrangements could be made with the President and Fellows of Harvard College for the use, under certain restrictions, of the Arboretum as a public park. Some progress has since been made towards this arrangement, which, without interfering with the scientific aims of the Arboretum, will increase its local influence by freely opening its collections to the public, and by securing for it additional and greatly needed land, suitable and dignified approaches, and carriage drives. Sufficient progress, however, in these negotiations has not been made to authorize the final adoption of any plan of planting the collections; and it has been found necessary to postpone again the arrangement of the Arboretum. This delay is greatly to be regretted. It necessitates the constant moving of the plants in the nursery, thus increasing the cost of maintenance, and threatening to injure if not destroy many rare trees procured or raised for the Arboretum with no small labor; for, as I pointed out in my last Report, it is impossible to arrange the plantations in the grounds now occupied on any plan which could be adjusted to the larger scheme under contemplation.

The nurseries have been enlarged by the addition of an acre and three quarters, and have been almost entirely remodelled and replanted. They are in a satisfactory condition and contain a great number of valuable and interesting plants.

Various experiments in book-keeping have been tried from time to time with the view of preserving an accurate record of every plant in the collection; they have not hitherto been satisfactory,

and have been abandoned as either too complicated or too expensive for practical working. The future value of the Arboretum would, however, be greatly increased, if the history of each tree could be preserved as a record of the hardiness and rate of growth of the species, or of different individuals of the same species raised under different conditions or descended from ancestors long subjected to different climatic conditions. An attempt, which promises to be successful, to preserve such records by means of a Card Catalogue similar to those now in general use in Public Libraries, has been made during the year, and a complete Catalogue of the collection has been prepared. A numbered card represents each species in the collection; and a card with the same number with an additional sub-number represents each distinct lot of plants of the species, raised at different times or obtained in a different manner from the lot represented by the first card.

The card contains the name of the species, the source from which the plant is derived, and, if raised in the Arboretum, the date at which the seed was sown, space being left for correcting the name when necessary, and for future records such as the date of final planting, or any notes upon the rate of growth, hardiness, &c., of the species which may seem desirable. This plan offers many advantages, and it is hoped that it will bear the test of continuous use. The collection is now represented by some 2,250 cards.

The interchange of plants and seeds with other botanical and horticultural establishments has been continued during the year. There have been 6,101 plants and 181 packets of seeds distributed, as follows: to all parts of the United States 4,792 plants (including a large number of cuttings supplied to different Public Gardens, and nursery establishments in various parts of the country), and 92 packets of seeds; to Great Britain, 910 plants, and 45 packets of seeds; to the Continent of Europe, 85 plants, and 40 packets of seeds; to St. Helena, 150 plants; to the Cape of Good Hope, 1 packet of seeds; to China, 150 plants; to Canada, 14 plants; to Australia, 2 packets of seeds; to India, 1 packet of seeds.

There have been received during the year 1,477 plants, and 247 packets of seeds from 41 donors.

Herbarium and Museum. — The Herbarium and Museum have

lost during the year the advantage of the devoted care of Mr. John Robinson, who has been called to other scientific duties. Mr. Robinson has had charge of these departments of the Arboretum from their beginning, and their excellent condition and efficient working-order are due to his labors. Mr. Charles E. Faxon has assumed the duties performed by Mr. Robinson.

Routine work has been continued during the year upon the Herbarium, which has received several important additions. The accessions of dried plants, woods, fruits, &c., numbering upwards of 700, have been received from 34 donors. Specimens of rare North American trees, principally Oaks and *Coniferae*, to the number of 790, have been distributed during the year to 23 individuals and Institutions in the United States and Europe.

During the year an English translation of the Comte de Cars Treatise upon the Pruning of Forest Trees has been prepared at the Arboretum, and published by the Trustees of the Massachusetts Society for Promoting Agriculture. During the last three years the Director has been actively engaged in studying the forests of the United States, and the economic value of North American woods, for the purpose of preparing a report upon this subject to be published as a Special Report of the 10th Census. Twenty Forestry Bulletins, generally accompanied by maps illustrating the forests of different parts of the country and containing some of the results of this investigation, have been published by the Department of the Interior during the year. The final report is nearly completed, and will probably appear during the next academic year.

Mr. Faxon has begun a set of detailed botanical drawings of the trees of the United States, to illustrate a new North American Sylva, which the Director has undertaken to prepare under the auspices of the United States Government. A set of colored drawings of the flowers and fruits of North American trees has also been commenced during the year to illustrate the very important Jesup collection of American forest products, which has been gathered under the general supervision of the Director of the Arboretum for the American Museum of Natural History at New York.

The Museum and Herbarium still find temporary accommodation in the Dwight House, Warren St., Brookline.

C. S. SARGENT, *Director*.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

DURING the past year the corner-piece of the Museum has been plastered, and some of the rooms are already occupied. This part of the building can be completed in such time that the Zoölogical and Geological laboratories will be ready for use at the opening of the next academic year.

The usual courses of instruction have been given at the Museum by Professors Whitney, Hagen, James, Farlow, and Faxon, and by Messrs. Mark, Davis, and Wadsworth.

For the details of this instruction and that in charge of Professor Whitney, I would refer to their several reports.

Two of the assistants of the Museum and two advanced students spent the greater part of the summer at my Newport laboratory. The former devoted their time principally to embryological studies of annelids, fishes, and polyps. The collections sent for study to Professors Verrill, Smith, and Mackintosh have been returned by them.

About eight hundred volumes have been added to the Library during the past year. A special list of the Museum publications is given to Appendix A of this Report; they are somewhat more extensive and numerous than has usually been the case, consisting of twelve numbers of the Bulletins, and of two numbers of the Memoirs. The publications issued elsewhere by several specialists, based mainly upon Museum materials, are mentioned in the special Reports of the Assistants of the Museum.

The publication of the preliminary Reports on the "Blake" collections has made excellent progress during the past year. There now remain unfinished of these only those upon the Fishes, Halcyonoids, Foraminifera, Ostracoids, Nemerteans, and some minor groups, as well as the Report on the bottoms. It has been decided to publish only the final Reports of the fishes of the east coast and of the Holothurians. That on the fishes will be published in connection with the United States Fish Commission, and include many species of shallower waters, first brought to light by the dredgings of the "Fish Hawk." Professor G. B. Goode and Dr. Bean have already prepared the greater part of this Report. Dr. H. Theel, of Stockholm, who has undertaken to work up the Holothurians, hopes next spring to transmit his final Report to the Royal Swedish Academy of Stockholm, where it is to be pub-

lished. Professor Verrill has completed the examination of the east coast Halcyonarians and Actinariæ, and is preparing a Report of these and of those of the Caribbean and Gulf of Mexico for the Museum Bulletin. Work is progressing favorably on the other Reports. I have myself nearly completed Part I. of the final Report on the Echini, twenty plates are already on stone, and the remaining plates are well advanced. Concerning the results of the explorations of the Tortugas, undertaken in 1881 under the auspices of the United States Coast Survey, I am preparing for the Museum Memoirs a monograph on the Porpitidæ and Vellidæ of the Gulf Stream. The twelve plates to accompany this Memoir are completed. A second memoir on the structure of the Tortugas, and the distribution of the corals forming that part of the Florida Reefs, is also nearly completed. It will be illustrated by two maps and two plates, representing sections of the reef.

Mr. W. H. Dall is now engaged in preparing the final report on the "Blake" mollusca. His preliminary Report on the mollusca collected by the United States Coast Survey Steamer "Blake" has been issued in parts from July to December, 1881. Bull. M. C. Z. IX. No 2; pp. 111.

Mr. P. H. Carpenter has concluded his preliminary Report on the Comatulæ of the "Blake." It was published in October, 1881. Bull. M. C. Z. IX. No. 4; pp. 18. The crinoids of the "Blake" collection, which had been placed in the hands of the late Sir Wyville Thomson for determination, to be worked up in connection with the "Challenger" material, have been transferred by Mr. John Murray, of the "Challenger" office, to Mr. Carpenter. Mr. Carpenter proposes in connection with his father, Dr. W. B. Carpenter, to work out as fully as practicable the minute anatomy of Pentacrinus, for which the material collected by the "Blake" is quite extensive. In addition to the Pentacrinus material, our specimens of Holopus were also placed in his hands. Mr. Carpenter is now preparing a preliminary report on this part of the "Blake" collection. During the spring, Professor S. I. Smith has completed his Report on the Crustacea collected by the "Blake" off the Atlantic coast of the United States, during the summer of 1880. We are under great obligations to Professor Smith, not only for the masterly manner in which he has accomplished his task, but also for his promptness in writing this

Report, and preparing the excellent plates which accompany his Report. Professor Smith's Report was published in June, 1882. Bull. M. C. Z. X. No. 1 ; pp. 108, pl. 16.

Dr. J. W. Fewkes, who accompanied me as assistant to the Tortugas during the winter of 1881, has written a report on the jelly-fishes we collected while carrying on explorations of the Tortugas, under the auspices of the United States Coast Survey. Bull. M. C. Z. IX. No. 7 ; pp. 40, pl. 7. April, 1882.

Dr. Fewkes has also worked up some of the results of his studies on the jelly-fishes of the New England coast, carried on in my laboratory at Newport. Bull. M. C. Z. IX. No. 8 ; pp. 20, pl. 2. April, 1882.

The other publications of the Museum issued during the past academic year are : —

Observations upon the species of the genus *Partula*, by Dr. W. D. Hartman. Bull. M. C. Z. IX. No. 5 ; pp. 26, 2 pl. The collection of the species of the genus *Partula*, made by Mr. Garrett for the Museum, forms a large part of the material placed at the command of Dr. Hartman.

Of the Memoirs, Part II. of Vol. VII. No. 2, — the climatic changes of later geological times, — has been published by Professor J. D. Whitney. Memoirs M. C. Z. VII. No. 2 ; Part II. ; pp. 121–264. March, 1882. The concluding part of this memoir is well advanced.

Of the Geological Series Vol. VII. there have been issued No. 6, by Professor Lesquereux, on recent additions to the collections of fossil plants of the Museum, and No. 7 by Mr. Wolff, on the great dyke at Quincy, Mass.

The second part of the sixth volume of the Bulletin has been published, completing that volume. It contains an important paper by Dr. E. L. Mark, on the maturation, fecundation, and segmentation of *Limax campestris* ; 5 pl., pp. 552. Besides a general review of what is known of the same phenomena in other classes of the animal kingdom, based upon his own researches on this difficult subject, Dr. Mark has added an exhaustive bibliography.

I have also undertaken, in connection with Professor Faxon and Dr. Mark, to issue in the Museum Memoirs a "Selection from Embryological Monographs," which will contain 4to illustrations compiled from monographs scattered through innumera-

ble scientific transactions and periodicals, and serve as an atlas to accompany any text-book on Embryology, such as Kölliker, Balbiani, Balfour, etc. Such a publication will, I hope, be found most useful to students and teachers. The 4to illustrations will be accompanied by a carefully prepared description of the plates, and an 8vo bibliographical list. The 4to illustrations and the bibliographical lists will be issued in parts limited to special groups of the animal kingdom.

The first part of the illustrations "Crustacea," has been prepared by Professor Faxon, and was published during this summer. Mem. M. C. Z. IX. No. 1; 14 pl., with an explanation of the Plates, June, 1882. Professor Faxon also prepared the Bibliography to accompany the Crustacea; it was published in March, 1882. Bull. M. C. Z. IX. No. 6; pp. 53. I have myself prepared the Bibliography of the Echinoderms. This was published in August, 1882. Bull. M. C. Z. X. No. 2, pp. 30, and I hope to finish the selection of the illustrations for the Echinoderms in time to issue the second part during this winter. Several of the plates of the acalephs and polyps are finished. I shall have the assistance of Dr. Fewkes in completing the preparation of this part. Professor A. S. Packard, Jr., has consented to take charge of the part relating to insects.

Other memoirs have also been prepared by the officers of the Museum and published elsewhere. They will be found mentioned in the reports of the special departments. I may mention specially the final Report on the Ophiuridæ of the "Challenger" expedition by Mr. Theodore Lyman, forming a part of Vol. IV. of the Zoölogical Results of the "Challenger." The preliminary Reports in the "Comptes Rendus" of some of the Crustacea collected by the "Blake" by Professor Alphonse Milne-Edwards, I have myself published in the Proc. Am. Acad. XVII; pp. 271-302, 20 pl. July, 1882. Part III. of the Young Stages of Osseous Fishes.

The late Professor F. M. Balfour has published, in connection with Mr. Parker, in the Proceedings of the Royal Society, a preliminary account of the Embryology of *Lepidosteus* based upon the material sent him from our Museum. Professor Mackintosh has completed his examination of the large series of sections of spines of sea-urchins sent him by the Museum. His Report has been sent for publication in the Memoirs of the Royal Irish Academy of Dublin.

The arrangement of the new rooms which have become available for exhibition and for storage has made excellent progress. All the material temporarily stored in the exhibition rooms has at last been removed and distributed to its final position, so that we may now hope within reasonable time to open all our Zoölogical Exhibition Rooms to the public, even should they not exhibit all the specimens we expect to place in them.

The greater part of the gallery of the Systematic Collection of Mollusks has been arranged, and Messrs. Hamlin and Hyatt hope to finish the work on the Mollusks during the coming year. The Systematic Collection of Fishes is now on exhibition and comprises the typical forms of the recent bony fishes, of the Selachians and of the Ganoids. It only remains now to intercalate the blanks and many of the fossil forms to complete this room.

The Systematic Collection of Birds is undergoing its final arrangement. A large part of the faunal collections intended for the Indian and Australian rooms has been placed in their exhibition cases, so that these rooms also can probably be open to the public during the coming winter. Fair progress has likewise been made in the African faunal collection. The skeletons of the reptiles, fishes, birds, and mammals, have been placed in the storage rooms destined for their use. The workroom containing the corals, polyps, echinoderms and sponges has been partially occupied, and Mr. Fewkes has arranged in the Systematic Room of Radiates a selected collection of Alcyonoids.

Mr. Garman has continued the explorations made by him during the two previous years, and has brought together an enormous collection of mammalian remains, — one of the finest, indeed, ever brought from the West. The thanks of the Museum are specially due to Dr. McGillicuddy of the Pine Ridge Indian Agency for the assistance he has given to Mr. Garman, and for his interest in his behalf.

Professor A. Lakes has continued to send fossil plants from Colorado to the Museum; they have as formerly been carefully identified by Professor Lesquereux.

The past winter Mr. Sternberg spent in Texas collecting fossil vertebrates from the permian. His collections have reached Cambridge safely; we are indebted to Major Henry of the 19th Cavalry, the Commander of Fort Sill, for the assistance he rendered to Mr. Sternberg while at work in his district. Later

in the season Mr. Sternberg returned to Kansas, where he is still engaged in making collections for the Museum.

I have specially to thank the Secretary of War, the Hon. R. T. Lincoln, and the Secretary of the Treasury, the Hon. H. M. Teller, for the letters of introduction they were kind enough to send to Messrs. Sternberg and Garman for use in the Territories they explored.

Major Powell, the Director of the United States Geological Survey, kindly allowed the Museum the privilege of sending a collector under certain restrictions with the expedition sent by the survey in charge of Mr. C. D. Walcott to collect palæozoic fossils. It will of course be of great importance to the Museum, in view of our recent acquisitions, that we should have as full a representation as possible of the Western palæozoic fossils.

Mr. Fewkes was sent by the Museum to examine the Bermudas, in hopes of finding it a suitable and accessible locality for studying the surface Fauna of the Gulf Stream. He is preparing a report of his expedition for the Bulletin.

Dr. Hagen spent the greater part of the summer on the line of the Northern Pacific Railroad making an entomological survey for the Northern Pacific Transcontinental Company. He collected during his trip a large number of insects from localities as yet little visited by naturalists.

Large accessions for the faunal collections have been purchased from Professor Ward. In addition to these purchases, we have also received in exchange or as gifts a number of collections mentioned in the special Reports.

During the past year the accessions to our invertebrate palæontological collections have been most important. The Museum has purchased from Mr. E. Haeberlein a large collection of Solenhofen fossils, the duplicate of a collection purchased some time ago from him by the British Museum; though, of course, it did not contain its greatest treasure, the *Archeopteryx*. But by far the most valuable accession we have received during the past year is the collection of Silurian fossils of Bohemia, brought together by the late J. M. von Schary, which has been purchased from his heirs. This collection is of the greatest value to American palæontologists, as it will give us the means of comparing the types of the great collections which have formed the basis of the works of Barrande and of Hall. Some idea of the magnitude of

this collection may be formed from the fact that it contains over 100,000 specimens; of these probably two thirds of the collection, no less than 1231 species, representing 157 genera, are identified.

The whole collection was packed by Professor Hamlin, who was sent out from the Museum on purpose to secure it. To Professor Poshepny we are under the greatest obligation for his services in carrying out the negotiations which ended in the purchase of this prize. The Schary collection, taken in connection with the collections brought together from American localities, now makes our collection of palæozoic fossil invertebrates one of the finest in existence.

Among the collections purchased in Europe, I may also mention a fine collection of green-sand fossils from Cambridge; a collection of fossil fishes from the upper Cretaceous of the Lebanon, Syria; and a good collection of Devonian fishes from Cromarty, Scotland, with a few specimens from the Mountain Limestone of Armagh, Ireland.

ALEXANDER AGASSIZ, *Curator.*

APPENDIX.

I.

TO THE PRESIDENT AND OVERSEERS OF HARVARD UNIVERSITY.

GENTLEMEN, — Would you accept the sum of fifty thousand dollars for the purpose of providing such medical education for women as will entitle them to the degree of Doctor of Medicine from your University ?

This sum to be held by you in trust, and the interest of the same to be added to the principal until the income of the fund can be used for such medical education of women.

If such an arrangement cannot be made within ten years, the fund to be returned to the donors.

(Signed)

MARIE E. ZAKRZEWSKA, M.D.,	} Boston.
LUCY E. SEWALL, M.D.,	
HELEN MORTON, M.D.,	
EMILY BLACKWELL, M.D.,	} New York.
MARY PUTNAM JACOBI, M.D.,	
ELIZABETH M. CUSHIER, M.D.,	
ELIZA M. MOSHER, M.D.,	South Framingham.
C. ANNETTE BUCKEL, M.D.,	San Francisco.
ALICE M. BENNETT, M.D.,	Norristown, Pa.

By EMMA L. CALL, M.D.,

Secretary of N. E. Hospital Medical Society.

151 Boylston Street, Boston.

II.

At a special meeting of the Faculty on April 8, 1882, present 16 members.

1. Whereas the committee of the Medical Faculty appointed to confer with a committee of the Overseers have laid before the Faculty a request of the committee of the Overseers that they be furnished with the reasons that have guided the Faculty in adopting the following vote, viz. : —

"Voted, that if the President and Fellows have a desire to be informed of the present views of the Medical Faculty upon the question of female medical education in the University, the latter would respectfully state that in their opinion it is not advisable that the President and Fellows should open a course of medical study to women under the auspices of the University."

2. The Medical Faculty would say, in reply, that many of the various reasons which have influenced them in passing this vote are already to be found in the abundant and accessible literature of the subject of female medical education. It is the belief of the Medical Faculty that the Overseers do not desire now to exact from them an extended recapitulation of what has already been said upon this subject.

3. Further reasons have been furnished by their committee to the committee of the Overseers at their meeting of conference.

4. Finally, the Medical Faculty would record their opinion as follows:—

Voted, that the fact that the Medical Faculty is strongly adverse to undertaking female medical education would be, in their belief, of itself, fatal to the success of an attempt in that direction.

5. Voted, that female medical education cannot be undertaken in the Medical School without a serious risk of detriment to the interests of the medical education now given to men.

This reply was unanimously adopted, except that two votes were cast against the resolution numbered 5.

III.

The following list gives an approximate statement of money paid for lands and buildings for University uses since Sept. 1, 1869, including present contracts and the proposed physical laboratory. The items in heavy-faced type were gifts, or built with money given; the other items were paid for by the President and Fellows. *Italic figures distinguish the items on which there is at present some income, the aggregate of these items being \$ 510,528.44.* All the other sums are unproductive.

1869-70.	Harvard and Massachusetts Halls, remodelled . . .	\$19,966.87
1869-72.	Land near the Observatory	{ 10,480.44
		{ <i>3,000.00</i>
1869-71.	Marsh lands { <i>In Brighton</i>	<i>12,000.00</i>
	{ <i>For boat-house</i>	<i>1,080.00</i>
	{ <i>Sundry</i>	<i>902.12</i>
1869-70.	Jarvis Field (contribution towards cost of) . . .	15,000.00
"	Thayer Hall	<i>*100,000.00</i>
1870-71.	Holyoke House	<i>120,470.97</i>
"	" " Party wall, 1873-74	<i>2,374.15</i>
"	" " Iron stair-case, 1876-78	<i>3,119.40</i>
"	College House, story added	<i>20,397.76</i>

1870-71.	Holmes estate	{ Gifts, 24,500 30,500 }	\$55,000	. . { 48,000.00 7,000.00
"	Botanical laboratory and lecture-room			*15,000.00
"	Medical College. Gift 2,500			*7,000.00
"	Dental School			15,000.00
1870-72.	Bussey Buildings			59,941.01
1871-72.	Boylston Hall, roof story added			13,310.00
"	" " fire-walls and cases			*3,500.00
"	Matthews Hall			*113,000.00
"	Weld Hall			*87,000.00
1871-73.	Scientific School, remodelled			18,032.71
"	Moving Dane Hall and the Bursar's Office			9,120.24
1872-73.	Appleton Chapel. Galleries and decoration . . .			15,359.62
"	Bussey water-supply and sheds			4,511.83
1873-74.	Brick and stone walks in the Yard			4,847.33
1873-75.	Dining-Hall. Items paid by the Corporation . . .			*5,000.00
1874-75.	Hospital			3,502.85
"	Advances to Dining-Hall Association			48,219.75
"	Boat-house.			2,000.00
1869-76.	Memorial Hall			368,980.90
1875-78.	Gore Hall extension			89,012.68
1876-77.	Boat-house			3,946.41
"	Delta fence			3,990.00
1876-82.	Peabody Museum (building and cases)			73,507.74
1878-79.	Hemenway Gymnasium			*103,000.00
"	Herbarium improvements			4,500.00
1878-80.	Sever Hall			117,460.32
1880-81.	Morse estate			16,873.00
1880-82.	Gore Hall, improvement of cellar			2,897.64
1869-82.	Museum of Zoölogy, enlargements and cases . . .			*200,000.00
1881-83.	Medical School, land and building (present con- tract and extras)			*285,000.00
1882-83.	Law School (present contract for)			*135,000.00
1883-84.	Physical Laboratory (gift for)			*115,000.00
Total				\$2,307,305.92

* Not exact.

IV.

SUMMARY OF STUDENTS IN THE UNIVERSITY AT THE BEGINNING OF THE ACADEMIC YEAR 1881-82.

College,		
Seniors	182	
Juniors	207	
Sophomores	217	
Freshmen	217	
	—	823
Unmatriculated Students		34
Lawrence Scientific School		30
Bussey Institution		5
Dental School		21
Medical School		241
Law School		151
Divinity School		29
Candidates for the degrees of A.M., Ph.D., and S.D.		41
Holders of Fellowships		7
Resident Graduates not Candidates for a Degree		3
		<hr/> 1385

Persons who attended the Summer Courses in Science in 1882.

Chemistry	33
---------------------	----

Number of Certificates issued to Women in 1882.

Preliminary Examination (Old Method)	2
Advanced Examination (Old Method)	2
Final Examination (New Method)	5
	<hr/> 9

V.

ACADEMIC HONORS FOR THE YEAR 1881-82.

COMMENCEMENT, JUNE 28, 1882.

Orations.

George Lyman Kittredge,
 Frank Nelson Cole,
 Albert French Lane,
 Arthur Prescott Lothrop,
 George Morey Richardson,

William Cushing Wait,
 Russell Whitman,
 John Whiting Mason,
 Frederick Russell Burton,
 Owen Wister.

Dissertations.

Joseph Henry Beale,
 Thomas William Ludlow,
 Franklin Arthur Dakin,
 Charles Hallam Keep,
 Frank Gaylord Cook,
 William Harrison Dunbar,
 William Lowell Putnam,
 Asaph Hall,
 Homer Gage,
 George Washington Dickerman,
 William Boyd Fiske,
 Charles Moen Rice,
 Lucien Moore Robinson,
 John Eliot Bullard,
 Alfred Marston Allen,

Roland Thaxter,
 George Lowell Mayberry,
 Frederic Atherton Fernald,
 Albert Andrew Howard,
 Luther Stetson Anderson,
 Charles Henry Goldthwaite,
 William Hobbs Manning,
 William Jones,
 Godfrey Lowell Cabot,
 William Henry Burnham,
 Philip Moen Washburn,
 Edward Knights Stevens,
 Sam Henry Morrill,
 Herbert Grafton Woodworth.

Disquisitions.

Richards Merry Bradley,
 Ivan Nikolayevitch Panin,
 Robert Luce,
 Joseph Ruggles Worcester,
 John Walter Perkins,
 Frederic Clinton Woodbury,
 John Plumer Lyons,
 Joseph Payson Clark,
 John McGaw Foster,
 Clarence Bancroft,
 Charles Armstrong Snow,
 Charles Eliot,
 Alfred Eugene Miles,
 John McGregor Cochrane,
 George Herbert Eaton,
 George William Perkins,
 Arthur Messinger Comey,
 Frederic Norton Goddard,
 Montgomery Adams Crockett,
 Benjamin Rufus Kittredge,
 Charles Denston Dickey,
 William Henry Danforth,
 Henry Winthrop Hardon,
 Joseph Austin Coolidge,

James Woods Babcock,
 Alexander Boyd,
 Charles Edgar Boynton,
 Wendell Phillips Davis,
 Frank Edward Fuller,
 Horace Emmet Smith,
 Robert Cumming,
 Charles Green Rockwood Jennings,
 William Joseph Rushmore,
 Frederic Mather Stone,
 George Trumbull Hartshorn,
 James Jay Greenough,
 Edwards Cheney,
 Charles Townsend Copeland,
 Harry Cormerais French,
 George Bradford Dunbar,
 McLaurin Jameson Pickering,
 Charles Walker Andrews,
 Richard Delaney,
 Chambers Baird,
 Harold Marsh Sewall,
 Guy Waring,
 Charles Francis Cutler,
 George Francis Barlow.

HONORS AT GRADUATION.

In Classics.

George Lyman Kittredge,	Highest Honors.
George Morey Richardson,	Do.
Franklin Arthur Dakin,	Honors.
Charles Henry Goldthwaite,	Do.
Albert Andrew Howard,	Do.
William Jones,	Do.
Albert French Lane,	Do.
William Hobbs Manning,	Do.
Russell Whitman,	Do.
Herbert Grafton Woodworth,	Do.

In Philosophy.

Russell Whitman,	Highest Honors.
William Henry Burnham,	Honors.

In History.

Arthur Prescott Lothrop,	Highest Honors.
William Cushing Wait,	Do.
Edmund Allen Whitman, A.B.,	Do.
Alfred Marston Allen,	Honors.
Frank Gaylord Cook,	Do.
Homer Gage,	Do.
Philip Moen Washburn,	Do.

In Mathematics.

Frank Nelson Cole,	Highest Honors.
John Whiting Mason,	Do.
Asaph Hall,	Honors.
William Lowell Putnam,	Do.

In Chemistry.

Godfrey Lowell Cabot,	Honors.
Charles Robert Sanger, A.B.,	Do.
Edward Knights Stevens,	Do.

In Music.

Frederick Henry Burton,	Highest Honors.
Owen Wister,	Do.
Sam Henry Morrill,	Honors.

HONORABLE MENTION AT GRADUATION.

- Alfred Marston Allen. *Political Economy ; History.*
 Luther Stetson Anderson. *German ; French.*
 Charles Walker Andrews. *History.*
 James Woods Babcock. *Natural History.*
 Chambers Baird. *History.*
 Clarence Bancroft. *Chemistry.*
 George Francis Barlow. *Philosophy.*
 Joseph Henry Beale. *Music ; Mathematics ; English Composition ; Greek.*
 Alexander Boyd. *History.*
 Charles Edgar Boynton. *Chemistry ; History.*
 Richards Merry Bradley. *Political Economy ; History.*
 John Eliot Bullard. *Philosophy.*
 William Henry Burnham. *Philosophy ; English Composition.*
 Frederick Russell Burton. *Music.*
 Godfrey Lowell Cabot. *Chemistry.*
 Edwards Cheney. *Music.*
 Joseph Payson Clark. *English.*
 Frank Nelson Cole. *Mathematics.*
 Arthur Messinger Comey. *Chemistry.*
 Frank Gaylord Cook. *Philosophy ; History ; Greek ; Political Economy.*
 Joseph Austin Coolidge. *German.*
 Charles Townsend Copeland. *History.*
 Montgomery Adams Crockett. *Natural History.*
 Robert Cumming. *Music.*
 Charles Francis Cutler. *History.*
 Franklin Arthur Dakin. *Greek ; Latin ; English Composition.*
 William Henry Danforth. *Natural History.*
 Wendell Phillips Davis. *Music ; German.*
 Richard Delaney. *History.*
 George Washington Dickerman. *Philosophy ; Greek.*
 Charles Denston Dickey. *History.*
 George Bradford Dunbar. *Natural History.*
 William Harrison Dunbar. *History ; Political Economy.*
 George Herbert Eaton. *Philosophy.*
 Frederic Atherton Fernald. *Chemistry.*
 Burton Monroe Firman. *Philosophy ; English Composition.*
 William Boyd Fiske. *Natural History ; Chemistry.*
 John McGaw Foster. *English Composition.*
 Harry Cormerais French. *Natural History.*
 Frank Edward Fuller. *English ; English Composition.*
 Homer Gage. *History.*
 Frederic Norton Goddard. *French.*
 Charles Henry Goldthwaite. *Greek ; Latin.*
 James Jay Greenough. *Mathematics ; Physics.*
 Asaph Hall. *Mathematics.*

- Henry Winthrop Hardon. *Greek.*
George Trumbull Hartshorn. *Chemistry.*
Albert Andrew Howard. *Greek; Latin.*
Henry Mascarene Hubbard. *Natural History.*
Charles Green Rockwood Jennings. *Chemistry.*
William Jones. *Greek; Latin.*
Benjamin Rufus Kittredge. *History.*
George Lyman Kittredge. *Greek; Latin; English; English Composition.*
Albert French Lane. *Greek; Latin; English Composition.*
Heyward Gibbons Leavitt. *Chemistry.*
Arthur Prescott Lothrop. *Political Economy; History.*
Robert Luce. *History; Political Economy; English Composition.*
Thomas William Ludlow. *Greek.*
Walter Irving McCoy. *Philosophy.*
William Hobbs Manning. *Greek; Latin; History.*
John Whiting Mason. *Mathematics.*
George Lowell Mayberry. *Physics; Philosophy.*
Alfred Eugene Miles. *Philosophy.*
Sam Henry Morrill. *Music.*
Edmund Seahon Perin. *Natural History.*
George William Perkins. *Natural History.*
John Walter Perkins. *Natural History; Political Economy.*
McLaurin Jameson Pickering. *History.*
William Lowell Putnam. *Mathematics.*
Charles Moen Rice. *Mathematics.*
George Morey Richardson. *Greek; Latin.*
Lucien Moore Robinson. *Physics; History.*
William Joseph Rushmore. *History; English Composition.*
Harold Marsh Sewall. *History; English Composition.*
Horace Emmet Smith. *History.*
Charles Armstrong Snow. *Greek; Philosophy.*
Edward Knights Stevens. *Chemistry.*
Frederic Mather Stone. *Greek.*
Roland Thaxter. *Natural History; English Composition.*
William Cushing Wait. *Political Economy; History.*
Guy Waring. *Natural History.*
Philip Moen Washburn. *History.*
Russell Whitman. *Philosophy; Greek; Latin.*
Owen Wister. *Music; Philosophy; English Composition.*
Frederick Clinton Woodbury. *Natural History.*
Herbert Grafton Woodworth. *Greek.*
Joseph Ruggles Worcester. *Mathematics.*

SECOND-YEAR HONORS.

*In Classics.**Juniors :*

Edwin Guthrie McInnes,	Highest Honors.
Walter Elijah Damon,	Honors.
Charles Frederick Nirdlinger,	Do.
Joseph Henry Sheffield,	Do.
Horace Elmer Sprague,	Do.

Sophomores :

Josiah Bridge,	Highest Honors.
George William Brown,	Do.
William Wallace Fenn,	Do.
William Amory Gardner,	Do.
George Andrew Stewart,	Do.
Henry Elbert Barnes,	Honors.
Heinrich Conrad Bierwirth,	Do.
Ernest Lee Conant,	Do.
Theodore Longfellow Frothingham,	Do.
William Halsey Garrison,	Do.
Philip Henry Goepp,	Do.
Charles Theodore Greve,	Do.
Eugene Hamlin Hatch,	Do.
Edward Andress Hibbard,	Do.
John Andrew Noonan,	Do.
Albert Sanborn Perkins,	Do.
Edwin Martin Pickop,	Do.
Lawrence Eugene Sexton,	Do.
Correa Moylan Walsh,	Do.

*In Mathematics.**Juniors :*

Osgood Putnam,	Honors.
----------------	---------

Sophomores :

Joseph Arthur Willis Goodspeed,	Highest Honors.
George Herbert Perkins,	Do.
George William Sawin,	Do.
Romeo Green Brown,	Honors.

VI.

PRIZES.

DETURS.

THE following students received books, called "Deturs," from the foundation of Edward Hopkins, for excellence in scholarship : —

Freshmen of 1880-81.

Clift Rogers Clapp.	Edward Wheeler Frost.
Ernest Lee Conant.	Joseph Arthur Willis Goodspeed.
Allen Curtis.	

Freshmen of 1881-82.

Victor Clifton Alderson.	Charles Mather Harrington.
William Francis Bacon.	Joseph Adna Hill.
Hugh Henry Brogan.	John Francis Holland.
Allen Howard Chamberlain.	Lawrence Litchfield.
Arthur Deloraine Corey.	Joseph Mansfield Long.
George Arthur Craigin.	Daniel William Lothman.
George Fauntleroy Davidson.	Theophilus Huntington Root.
Bancroft Gherardi Davis.	Edward Irving Smith.
Theodore Dunham.	William Christopher Smith.
Edward Tyler Edgerly.	Abner Ernest Strong.
Samuel Lynde Foster.	Ernest Lawrence Thayer.
John Hays Gardiner.	Arthur Gordon Webster.
John McGregor Goodale.	Charles Alexander Whittemore.
Robert Stetson Gorham.	Edward Blake Young.
Otto Rheinhard Hansen.	

BOWDOIN PRIZES.

Frank Bolles, of the Class of 1882 in the Law School.
 Robert Luce, of the Class of 1882.
 George Lyman Kittredge, of the Class of 1882.
 Osgood Putnam, of the Class of 1883.

BOYLSTON PRIZES FOR ELOCUTION.

First Prizes.

Burton Monroe Firman, of the Class of 1882.
 Sherman Hoar, of the Class of 1882.

Second Prizes.

George Herbert Eaton, of the Class of 1882.
 George Hyde Page, of the Class of 1883.
 Osgood Putnam, of the Class of 1883.

LEE PRIZES FOR READING.

Sophomores.

George Read Nutter.
 Milton Jerome Stone.
 Edward Franklin Weld.
 Lucius Junius Henderson.
 Edward Blake Young.

Freshmen.

Howard Augustus Taylor, from Wilson & Kellogg's School.
 Odin Barnes Roberts, from the Chauncy Hall School.
 Crosby Church Whitman, from Adams Academy.
 Edward Everett Hamlin, from the Roxbury Latin School.
 Edward Everett Rose, from the Chauncy Hall School.
 George Edwin Howes, from the Boston Latin School.

VII.

DEGREES.

Bachelors of Arts of the Class of 1882	177
Bachelors of Arts of former Classes	5
Bachelors of Divinity	5
Bachelors of Laws	23
Doctors of Medicine	86
Doctors of Dental Medicine	3
Civil Engineer	1
Bachelor of Science	1
Bachelor of Agriculture	1
Doctor of Science	1
Masters of Arts	7

HONORARY DEGREES.

Masters of Arts.

Horatio Hale.
 Henry Lee Higginson.

Doctors of Laws.

Henry Jacob Bigelow.
 William Crowninshield Endicott.
 Marcus Morton.
 Charles O'Connor.

VIII.

COMMITTEES OF THE OVERSEERS, FOR 1882.

To visit the University.

President of the Board of Overseers.	The Secretary of the Board of Education.
His Excellency the Governor.	
His Honor the Lieutenant-Governor.	The Secretary of the Board of Overseers.
The President of the Senate.	
The Speaker of the House of Representatives.	The Chairman of each of the Visiting Committees.

To visit the College. — On Government.

Edwin P. Seaver.	Waldo Higginson.
Edward E. Hale.	Le Baron Russell.
Theodore Lyman.	Moorfield Storey.
Francis G. Peabody.	John Fiske.
Henry Lee.	James E. Cabot.
Charles R. Codman.	Richard M. Hodges.
John Noble.	Oliver W. Holmes, Jr.
J. T. G. Nichols.	

To visit the College. — On Languages.

Le Baron Russell,	Robert E. Babson.
Robert D. Smith.	J. B. Torricelli.
Thomas W. Higginson.	Edward Edes.
John Noble.	Carl Wolff.
Roger Wolcott.	Lucius H. Buckingham.
Arthur Dexter.	Octavius B. Frothingham.
W. B. Swett.	Thomas J. Cushing.
Charles P. Curtis.	Francis A. Waterhouse.

To visit the College. — On Rhetoric and English Literature.

Moorfield Storey.	Roger Wolcott.
John T. Morse, Jr.	Henry W. Foote.
George B. Chase.	Charles P. Curtis.

To visit the College. — On History and Political Science.

John Fiske.	John O. Means.
John T. Morse, Jr.	James H. Means.
Alexander McKenzie.	Russell Gray.
Thomas W. Higginson.	Abbott Lawrence.
Henry C. Lodge.	Brooks Adams.
Edward G. Porter.	Edward Atkinson.

To visit the College. — On Philosophy.

James E. Cabot.	John Fiske.
Alexander McKenzie.	Joseph B. Warner.
Francis G. Peabody.	John O. Means.

To visit the College. — On Mathematics, Physics, and Chemistry.

Edwin P. Seaver.	David Sears.
Daniel B. Hagar.	Channing Whitaker.
William Watson.	Oliver Wadsworth.
George V. Leverett.	Francis Blake, Jr.
J. D. Runkle.	Robert Amory.
Percival Lowell.	Walter C. Cabot.

To visit the College. — On Natural History.

Richard M. Hodges.	Henry Wheatland.
Theodore Lyman.	William H. Niles.
George B. Bradford.	Thomas B. Curtis.

To visit the College. — On Fine Arts and Music.

Oliver W. Holmes, Jr.	William F. Apthorp.
Charles C. Perkins.	Charles A. Cummings.
S. L. Thorndike.	Henry L. Higginson.
John S. Dwight.	J. Francis Tuckerman.
Arthur Dexter.	Francis D. Millett.

To visit the Divinity School.

James F. Clarke.	Franklin Johnson.
Phillips Brooks.	Waldo Higginson.
Edward E. Hale.	Henry W. Foote.
Alexander McKenzie.	Charles F. Dole.
Edward H. Hall.	Thomas Hill.
Adams Ayer.	Arthur Brooks.
Artemas B. Muzzey.	

To visit the Law School.

John Lowell.	Moorfield Storey.
Leverett Saltonstall.	Francis E. Parker.
George O. Shattuck.	Robert M. Morse, Jr.
Oliver W. Holmes, Jr.	Francis C. Barlow.
William G. Russell.	Peter B. Olney.
Darwin E. Ware.	Charles C. Beaman, Jr.
William C. Endicott.	Edmund Wetmore.
Robert D. Smith.	

To visit the Scientific School, the Bussey Institution, the Peabody Museum of American Archaeology and Ethnology, and the Museum of Comparative Zoölogy.

Morrill Wyman.
Theodore Lyman.
R. M. Hodges.
Stephen Salisbury.
Edwin P. Seaver.
John O. Sargent.
Henry P. Kidder.
Benjamin S. Rotch.
Robert W. Hooper.
Gustavus Hay.

Channing Whitaker.
Charles O. Thompson.
T. J. Coolidge.
Alphonse Fteley.
Clemens Herschel.
Ernest W. Bowditch.
S. M. Felton.
William E. Worthen.
Thomas C. Clarke.

To visit the Medical School and Dental School.

Le Baron Russell.
Morrill Wyman.
Richard M. Hodges.
Samuel A. Green.
Joseph Sargent.
Frederic Winsor.
John G. Park.
George C. Shattuck.

Hall Curtis.
James L. Little.
Samuel L. Abbott.
Francis M. Weld.
Algernon Coolidge.
John C. Dalton.
Austin Flint.

To visit the Observatory.

James F. Clarke.
Charles R. Codman.
William Amory.
Amos A. Lawrence.
Francis G. Peabody.
J. Ingersoll Bowditch.
John C. Palfrey.
George I. Alden.
Robert Treat Paine.

J. R. Coolidge.
Robert C. Winthrop.
Charles F. Choate.
Alvan Clark.
Frederic O. Prince.
Augustus Lowell.
J. Montgomery Sears.
Simon Newcomb.

To visit the Library.

Phillips Brooks.
John Fiske.
John T. Morse, Jr.
John O. Sargent.
Francis G. Peabody.
Samuel A. Green.
William W. Greenough.
Charles A. Cutter.
George W. Wales.
Charles C. Smith.
Samuel S. Green.

Stephen Salisbury, Jr.
Samuel Eliot.
Delano A. Goddard.
Francis V. Balch.
Henry G. Denny.
Charles Deane.
Henry F. Jenks.
Mellen Chamberlain.
George Dexter.
John M. Brown.
Charles F. Adams, Jr.

To visit the Botanic Garden and Herbarium.

Leverett Saltonstall.	Francis A. Osborn.
Fred L. Ames.	John C. Phillips.
William Boott.	Henry P. Walcott.
John Cummings.	Henry W. Sargent.
William Gray, Jr.	Henry C. Lodge.
Augustus Lowell.	J. Pierpont Morgan.
H. H. Hunnewell.	George Ellwanger.
J. Warren Merrill.	Thomas Meehan.

On the Treasurer's Accounts.

Leverett Saltonstall.	Charles H. Parker.
John Lowell.	Israel M. Spelman.
Henry P. Kidder.	George B. Chase.
Amos A. Lawrence.	

On Elections.

Henry W. Paine.	William C. Endicott.
Moorfield Storey.	Leverett Saltonstall.
John Lowell.	

On Reports and Resolutions.

Robert D. Smith.	Francis E. Parker.
William C. Endicott.	Charles R. Codman.
Henry W. Paine.	Henry Lee.
William Amory.	

INDEX.

Admission to the College of graduates of other colleges	10
Admission to College, statistics of	57-60
Admission to the Divinity School	26-81
Admission-requisitions to College	14, 56
Anticipation of Freshman studies	11-74
Appleton Chapel, services in	20
Appointments	6-10
ARNOLD ARBORETUM, report on	122-124
,, ,, permanent planting postponed	41, 122
,, ,, card-catalogue of plants	123
,, ,, exchanges	123
,, ,, herbarium and museum	124
Athletic sports, good results of	19
,, ,, regulation of	16-18
BOTANIC GARDEN, report on	103-106
,, ,, bequest of John Amory Lowell for	105
,, ,, inadequate endowment of	40, 104-106
BUSSEY INSTITUTION, report on	97
,, ,, pecuniary condition of	40
CHEMICAL LABORATORY, report on	106-109
,, ,, instruction in	107
,, ,, publications from	107-109
,, ,, researches made in	41
Chinese instruction — end of the experiment	46
Class funds	50
College course, how to shorten	12-75
COLLEGE, report on	54-75
,, instruction in	61-67
,, number of weekly exercises by departments	72
,, losses and gains in the several classes	55
Commencement parts	136
Committees of the Overseers	144-147
Co-operative Society	48
Deaths	3
Degrees conferred	143

DENTAL SCHOOL, report on	93-95
" " desert and needs of	39-95
" " instruction in	94
Dining Hall Association, difficulties of	47
Disturbances on Commencement night	26
DIVINITY SCHOOL, report on	80-84
" " admission to	26, 81
" " instruction in	82-83
Funds as memorials	52
GRADUATE DEPARTMENT, report on	76-79
" " degrees conferred	78
" " instruction in	77
Graduates of other colleges coming to Harvard	10
Graduates, occupations of	25
Hollis professorship filled	27-81
Honorable mention at graduation	139, 140
Honors at graduation	138
Honors, second-year	141
Land and buildings acquired since 1869, cost of	50, 134
LAW SCHOOL, report on	84-89
" " attendance at 1870-1881	84
" " book fund provided	30
" " instruction in	86, 87
" " new professorship in	30
" " results of examinations	85-88
Law, teachers of, how procurable	31
LAWRENCE SCIENTIFIC SCHOOL, report on	95-97
" " " diminished number of special students	96
LIBRARY, report on	97-103
" accessions to	100
" bibliographical contributions issued by	97, 98
" its expenses reduced in 1881-82	43
" its need of funds for administration and service	43
" its work hindered	42
" revision of catalogue	102
" use of	100
Master's degree, the conditions of	22-25
Medical education, improvements in	38
Medical education of women, Corporation's votes about	32, 37
" " " " Overseer's votes about	32, 34, 37
MEDICAL FACULTY, averse to undertaking female education	36, 133
" " protest of	33
" " withdraws its protest	35
MEDICAL SCHOOL, report on	89-93
" " admission of women to	32-38, 133
" " instruction in	90, 91
" " results of examinations	91, 92
Mineral Cabinet, increase of	109

Ministers, one cause of the dearth of	29
MUSEUM OF COMPARATIVE ZOOLOGY, report on	124-131
" " " accessions to	45, 129-131
" " " how its work is paid for	46
" " " progress of the building	45-125
" " " progress in arranging	45-129
" " " publications of	45, 125-128
Need of the University, permanent income from funds	51
OBSERVATORY, report on	110-122
" accumulated observations reduced and published	44
" devoted to astronomical physics	44
" a permanent fund for	45, 121
" publications of	44, 116-119
" routine work offers the surest return	44
" true service of	121
" work of the instruments	110-116
Physical Laboratory, endowment of completed	49
Prayers, conduct of	19, 20
Prizes	142
Resignations	4-6
Scholarships for graduates	22
" for special students	16
Special students in the College	15-73
Summary of students in the University	136
Sunday services changed from morning to evening	20
University lectureships in 1881-82	49
Veterinary School	46
Winn professorship filled	28-80

TREASURER'S STATEMENT.



1882.

TREASURER'S STATEMENT.

TO THE BOARD OF OVERSEERS OF HARVARD COLLEGE:—

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending August 31, 1882, in the usual form.

The Funds separately invested, with the income thereof, are as follows :—

COLLEGE.	Principal.	Income.
Bowditch Scholarships (part of),		
\$70,000, Massachusetts 5% Bonds, sold during the year, . .	1,681.95	
Bassett Scholarships (part of),		
Mortgage, paid off during the year,		275.00
Pennoyer Scholarships (part of),		
Pennoyer Annuity in England,	4,444.44	277.50
Rumford Professorship (part of),		
French Rentes,	10,000.00	579.37
Jonathan Phillips Fund,		
Mortgage,	10,000.00	500.00
Daniel H. Peirce Fund (part of),		
Mortgage,	12,766.91	688.72
Samuel Ward's Gift,		
Ward's (Bumkin) Island, Boston Harbor, . . .	1,200.00	50.00
Botanic Garden Fund (part of),		
\$17,000 New York Central R. R. Bonds,	17,000.00	1,020.00

LIBRARY.

Charles Minot Fund (part of),		
\$60,000, Buffalo, Bradford, & Pittsb. R. R. Bonds, . .	60,000.00	4,200.00
Ichabod Tucker Fund (part of),		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00

SCIENTIFIC SCHOOL.

John B. Barringer Fund (part of),		
40 shares Schenectady Bank Stock,	2,200.00	200.00

Amounts carried forward, . . .	\$122,611.35	\$9,672.54
--------------------------------	--------------	------------

Amounts brought forward, \$122,611.35 \$9,672.54

MUSEUM OF COMPARATIVE ZOOLOGY.

Agassiz Memorial Fund (part of),

Personal notes (endorsed), 25,006.69 1,482.94

OBSERVATORY.

Anonymous gift (now used to pay annuities),

\$1,000, Michigan South'n & No. Indiana R.R. Bond,	1,000.00	70.00
\$2,000, Cincinnati Municipal Bonds,	2,000.00	140.00
\$2,000 Minneapolis Municipal Bonds,	2,000.00	160.00
50 shares Pittsburg, Fort Wayne, & Chicago, R. R.		
Stock,	5,000.00	350.00

SPECIAL FUNDS.

Bussey Trust,

Real Estate, 413,092.80 16,170.12

Robert Troup Paine Fund (accumulating),

\$22,500 Mass. 5% Bonds, 25,805.00 1,071.59

New Law School Professorship,

Personal note, 90,000.00 2,250.00

\$686,515.84 \$31,367.19

The other Funds of the College are invested as a whole. The general investments, with the income thereof, are as follows :—

Investments.	Principal, September 1, 1881.	Principal, August 31, 1882.	Income.
Notes, Mortgages, &c.,	\$711,103.74	\$843,836.83	\$45,168.20
Railroad Bonds and Premiums,	972,532.48	1,040,885.85	56,797.39
Railroad Stock,	32,150.22	106,811.93	3,395.00
New Boston Coal Mining Co. Bonds,	9,000.00	9,000.00	700.00
Bank Stock,	63,964.00	63,964.00	4,548.07
Manufacturing Stock,	102,058.29	102,058.29	8,573.40
Real Estate,	1,396,073.30	1,396,523.30	77,289.00
Unoccupied Lands,	75,487.79	75,487.79	
Brattle Street Reversion,	1,000.00	1,000.00	
Advances to Scientific School,	4,905.14	4,707.27	294.31
“ “ Dental School,	15,827.74	14,488.37	949.96
“ “ Bussey Trust,	40,566.13	40,566.13	2,028.31
“ “ Dining Hall Association,	37,232.16	36,232.16	2,233.93
“ “ Scudder's Catalogue,	233.42	208.86	
“ “ Books,		29.36	
“ “ Chinese Subscription,	374.38		
“ for altering Appleton Chapel,	2,859.62	2,859.62	
“ repairing College Wharf,	411.88		8.12
Term Bills due Oct., 1882,	71,163.80	70,016.74	
Term Bills overdue,	2,259.56	2,367.01	
Cash in Suffolk National Bank,	19,063.38	9,211.25	
Cash in hands of Bursar,	1,131.61	5,090.99	
Totals of general investments,	3,559,398.64	3,825,345.75	201,985.69
Totals of special investments,	674,021.61	686,515.84	31,367.19
Amounts,	\$4,233,420.25	\$4,511,861.59	\$233,352.88

During the year, \$70,000 of Massachusetts bonds, belonging to the Bowditch Scholarship Fund, have been sold at an advance of \$11,275 over their cost, and the gain has been credited to the capital of the Bowditch Scholarship Fund, the whole of which now shares in the "general investments." \$217,000 of seven per cent railroad bonds have been sold at a premium of \$39,567.50, which was a net gain of \$10,487 upon their cost, but the whole premium has been credited to the account of "railroad bond premiums" to provide against any losses that may be made upon future sales. The same account has been charged with the premium on \$236,000 of seven per cent railroad bonds bought, amounting to \$35,325. The account of "railroad bond premiums" has been credited with \$3340, which was taken from the interest received on \$334,000 of seven per cent bonds held during the whole year, and with the difference between accrued interest repaid and that advanced during the year, amounting to \$102.88. The sales and purchases of bonds were made to take advantage of changes in market prices from time to time, due to fluctuations both in the current rate of interest and in the demand for or supply of particular securities. The bonds bought yield upon their cost a net income one half of one per cent higher than the bonds sold, but they are all of a high class, and most of them provide for payment of both principal and interest in gold. All other changes in the investments of the University are accounted for by the receipts and payments hereinafter stated in detail.

The net income of the general investments (\$201,985.69) has been divided at the rate of $5\frac{6}{10}\%$ per cent among the Funds to which they belong, except the Medical School and Law School Building Funds, which have received a special rate of four per cent on their balances during the period of construction. The balance of \$208.97 has been placed to the credit of the University account.

The rate of income this year as compared with that for 1880-81 shows a gain of $\frac{2}{10}\%$ of one per cent, due chiefly to a higher average rate of interest upon temporary loans, and to less outlay proportionally upon repairs and improvements of productive real estate. For the year 1882-83 the rate of income is likely to be below five and a half per cent.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments :—

Interest on funds for

University Salaries and Expenses,	\$17,825.86	
College Expenses,	3,176.42	
Library,	1,344.92	
College Salaries,	28,280.98	
Gymnasium, and repairs on College buildings, . .	none.	
College Term bills,	162,983.04	
Sundry cash receipts,	7,571.16	
	<hr/>	221,182.38

Expended for

University Salaries and Expenses,	\$25,473.69	
College Expenses,	39,269.63	
Library Salaries and Expenses (not books),	20,137.21	
College Salaries,	137,059.27	
Gymnasium Expenses,	6,272.02	
Settlement of account for Chinese Instruction, . . .	2,954.51	
Repairs and insurance on College Buildings not valued on Treasurer's books,	4,754.69	
	<hr/>	235,921.02
Balance, showing deficit for the year, which has been charged off to Stock Account,		\$14,738.64

For the University, College, and Library accounts there have been considerable gains from tuition fees and rent of rooms, and a temporary exemption from heavy charges for repairs and improvements, but the ordinary expenses of carrying on the work as now laid out, together with a special charge of nearly \$3,000 for the settlement of the account for Chinese instruction, which included the cost of sending to China the widow and children of the late Ko Kun-hua, have left a deficit for the year amounting to \$14,738.64, which sum has been taken from the unrestricted capital of the University. This year, for the first time, a fair proportion of the expenses of the Gymnasium and of the Bursar's office have been charged to the Law, Divinity, and Scientific Schools. During the year 1882-83 the Corporation will be able to keep the expenses within the income, partly by cutting off outlays, but chiefly from the increase in the number of undergraduates.

For the Divinity School the income from the new endowments and an increase of receipts from tuition fees and rent of rooms, as well as from the Bussey Trust, have made a surplus of \$2,819.41, in spite of a larger expenditure for salaries. For 1880-81 there was a surplus of \$2,217.41.

For the Law School there is a surplus of \$364.26, the income from the new Book Fund having allowed a larger outlay upon books, and an increase of income from the Bussey Trust having partly covered the new charges on account of the expenses of the Gymnasium and the Bursar's office. The salary of the new professor has been provided for from the interest upon the note given for the foundation of the new professorship. For 1880-81 there was a surplus of \$675.77.

The Medical School has made a surplus of \$7,843.92, partly due to a small gain in fees from students. For 1880-81 the surplus was \$5,946.69.

For the Dental School there is a surplus of \$1,339.37, due to a large increase in the number of students. This surplus has been used to reduce the debt of the School. For 1880-81 there was a surplus of \$304.43.

For the Lawrence Scientific School there is a surplus of \$197.87, which has been used to reduce the debt of the School. The number of students has been much smaller than last year, the large increase of numbers then reported having proved to be only temporary. For 1880-81 there was a surplus of \$3,041.35. The sum of \$4,652.06 from the income of the Agassiz Memorial Fund has been used to repay in part the notes given by Mr. Agassiz to the Memorial Fund for advances on account of the extension of the Museum building. Mr. Agassiz has continued to make very large private outlays for the benefit of the Museum.

In the Observatory the expenses have consumed all the subscriptions for current use received within the year and left a deficit of \$1,172.67, which has been met out of the annual subscriptions paid in advance during the year 1878-79. For 1880-81 there was a deficit of \$1,537.22.

For the Bussey Institution there is a surplus of \$805.55, due to a larger income from the Bussey Trust and a reduction of salary payments. This surplus will be used for salaries during the ensuing year. For 1880-81 there was a deficit of \$2,160.30.

The gross income from the Bussey stores has largely increased since last year, but heavy expenses have been incurred for repairs, leaving the gain of net income only a little over \$2,000. For the year 1882-83 the net income is not likely

to be much larger than during the past year, as considerable outlay for repairs must be made from the year's income.

During the year the name of the Graduates' Scholarship has been changed to that of the "Rogers Scholarship," in honor of Henry Bromfield Rogers, of the class of 1822, who founded the scholarship in the year 1869, and who now consents that his name be attached thereto; and the name of the Senior Exhibition has been changed to that of the "Palfrey Exhibition," in memory of the late John G. Palfrey, who founded the Exhibition in the year 1821. The name of the Massachusetts Fund for the Botanic Garden has been changed to that of the "Lowell Fund for a Botanic Garden," in honor of the late Judge Lowell, who mainly procured the original subscriptions, and in accordance with a provision made by the subscribers to the Fund for a change of its name under certain circumstances.

Gifts have been received during the year as follows:—

TO FORM NEW FUNDS OR INCREASE OLD ONES.

From Edward Russell, Esq., \$125, to increase the scholarship founded by him.

From the administrator of Miss Martha C. Derby, \$5000, to found a scholarship in the University.

From an anonymous friend, \$90,000, as the foundation of a new professorship in the Law School.

From the executors of John Amory Lowell, \$20,000, to be added to the Massachusetts Fund for the Botanic Garden; and \$20,000, "three quarters of the income of which shall from time to time be applied to the purchase of books for the Library, and the other one quarter be added yearly to the principal."

From the executors of Charles Sumner, \$17.20, as a final payment on account of the Sumner Book Fund.

Subscriptions for the increase of the Botanic Garden Fund, paid to Sept. 1, 1882, from

Alexander Agassiz, \$1000,

H. H. Hunnewell, \$1000.

Subscriptions for the endowment of a Physical Laboratory, paid to Sept. 1, 1882, from

A friend	\$2000	Alex. Cochrane	\$500
A. Agassiz	5000	Wm. H. Forbes	1000
Sidney Bartlett	5000	H. P. Kidder	2000
Francis Blake	1000	Arthur T. Lyman	500
Walter C. Cabot	1000	Theodore Lyman	500
Geo. C. Clark	1000	J. A. Rumrill	1000
Louis C. Clark	1000	P. H. Sears	500
		<hr/>	
		\$22,000	

Subscriptions for the further endowment of the Divinity School, paid to Sept. 1, 1882, from

Abbot, Prof. Ezra	\$100.	Gilman, Rev. N. P.	\$10.
Allen, Rev. Joseph H.	40.	Lee, Henry	300.
Barrows, Rev. S. J.	33.34	Leonard, Rev. George	25.
Bixby, Rev. James T.	33.33	Lippitt, Henry	100.
Bowditch, J. Ingersoll	200.	Lombard, Rev. Charles P.	5.
Brown, Rev. H. W.	10.	Muzzey, Rev. A. B.	100.
Eliot, Charles W.	100.	Osgood, Rev. E. Q. S.	5.
Everett, Prof. C. C.	100.	Thayer, Rev. George A.	50.
Fish, Rev. William H.	10.	Toy, Prof. C. H.	400.
		<hr/>	
		\$1,621.67	

Subscriptions to establish a fund of which the income shall be used for the purchase of books for the Law School, paid to Sept. 1, 1882, from

A senior member of the Bar	\$5000	Lowell, A. L.	50
Beaman, C. C., Jr.	250	Lowell, F. C.	25
Belmont, August	500	Lowell, John	1000
Bonaparte, Charles J.	500	Morse, Godfrey	25
Brown, Addison	500	Morse, John T.	200
Cadwalader, J. L.	50	Morse, R. M., Jr.	25
Carter, James C.	500	Myers, James J.	\$25
Choate, Charles F.	500	Nickerson, George A.	500
Choate, Joseph H.	500	Norcross, Greenville H.	100
Coolidge, D. H.	100	Norcross, Otis	200
Coolidge, J. Randolph	250	Norcross, Otis, Jr.	100
Crocker, U. H.	100	Palfrey, F. W.	50
Dexter, W. S.	100	Parker, F. E.	100
Endicott, William, Jr.	1000	Parkman, Henry	50
Fox, Austin G.	100	Pierce, Henry L.	250
Gardiner, William H.	500	Pratt, Edward E.	100
Gray, Russell	100	Prichard, William M.	250
Hayes, Francis B.	500	Putnam, George	500
Holmes, Artemas H.	100	Putnam, Henry W.	100
Hubbard, C. E.	25	Roberts, George L.	100
Keasbey, E. Q.	5	Ropes, John C.	100
Kimball, David P.	250	Russell, William G.	1000
Lilienthal, estate of Rev. Dr. Max	500	Salisbury, Stephen	500
Loring, C. W.	250	Sargent, J. O.	500

(Continued.)

Subscriptions for the Law School Book Fund (continued) :

Sears, P. H.	500	Villard, Henry	5000
Shattuck, Geo. O.	1000	Wharton, W. F.	25
Storow, James J.	50	Wigglesworth, George	100
Thayer, E. V. R.	100	Wolcott, J. Huntington	200
Thorndike, S. L.	100	Wolcott, Roger	100
Vaughan, William W.	25		
			<hr/> \$25,230

Subscriptions to be applied towards a fund for the endowment of the Dental School, paid to Sept. 1, 1882, from

Dr. George H. Ames	\$20	Dr. George F. Grant	\$20
Dr. F. E. Banfield	50	Dr. A. B. Jewell	20
Dr. A. G. Bouvé	20	Arthur T. Lyman	100
Dr. C. A. Brackett	100	Dr. H. C. Meriam	20
Dr. E. P. Bradbury	20	Dr. F. A. Merrill	20
Dr. E. C. Briggs	20	Dr. L. D. Shepard	20
Dr. T. H. Chandler	20	Dr. E. H. Smith	20
Dr. E. E. Frost	20	Dr. J. G. W. Werner	20
			<hr/> \$510

The sum of \$5 received last year from Dr. S. S. Silva and entered as a gift for current use has since been transferred to this endowment fund for the Dental School.

GIFTS FOR IMMEDIATE USE.

From an anonymous friend \$135,000 has been received for the erection of a new building for the Law School.

From Robert N. Toppan, Esq., \$150, to be used as a prize to be awarded in 1882-83 on Political Science in the graduate department of the University.

From George W. Wales, Esq., \$200, for books for the Library, in continuance of former gifts for the same purpose.

Subscriptions for the current expenses of the Observatory, paid to Sept. 1, 1882, from

Adams, Charles Francis	\$100	Fay, R. S.	50
Ames, Fred. L.	100	Forbes, Mrs. J. M.	200
Beal, James H.	50	Forbes, J. M.	100
Bremer, John L.	100	Gardner, George	100
Brimmer, Martin	100	Gardner, John L.	100
Cabot, Walter C.	50	Grew, Henry S.	50
Choate, Charles F.	100	Hemenway, Mrs. A.	100
Coolidge, T. Jefferson	100	Higginson, George	100
Curtis, Charles P.	100	Hooper, Mrs. S.	100
Dalton, Charles H.	50	Hunnewell, H. H.	\$100
Davis, James	200	Lodge, Mrs. Anna C.	50

(Continued.)

Subscriptions for the Observatory (continued) : —

Lowell, Augustus	50	Shattuck, G. O.	50
Norcross, Otis	100	Shaw, Mrs. Cora L.	30
Paine, Charles J.	50	Thayer, Nathaniel	100
Payson, Samuel R.	50	Upham, George P.	50
Pickering, E. C.	200	Weld, W. G.	50
Phillips, John C.	100	Wheelwright, A. C.	50
Robbins, R. E.	50	Wigglesworth, Misses	100
Sears, Mrs. David	100	Winthrop, Robert C.	50
Sears, F. R.	50		
			<hr/>
			\$3,330

Subscriptions to aid in publishing the University Bulletin,
paid to Sept. 1, 1882, from

A. Agassiz	\$50	C. S. Sargent	\$50
Charles P. Curtis	200	W. B. Weeden	100
Henry Lee	50		
			<hr/>
			\$450

From an anonymous friend, \$500, to increase the salary of the Professor of Entomology.

From the Dante Society, \$50, for the purchase of books on Dante.

From R. H. McDonald, Esq., \$20, for the purchase of books for the French department.

Final subscriptions for Chinese Instruction, paid to Sept. 1,
1882, from

Martin Brimmer	\$333.34	E. R. Mudge	\$333.33
D. O. Clark	166.67	George C. Richardson	333.34
George B. Dixwell	333.		
			<hr/>
			\$1,499.68

For lectures on Political Economy, through William Gray, Esq., Treas., \$300.

Subscriptions towards the fund for the new building for
the Medical School, paid to Sept. 1, 1882, from

Ames, Frederick L.	\$10,000	Hamlen, Nathaniel P.	100
Blake, Arthur W.	1000	Head, Charles	100
Bradlee, Frederick H.	100	Hogg, Brown & Taylor	200
Burnett, Joseph	200	Lyman, Arthur T.	500
Burnham, John A.	1000	Lyman, Theodore	250
Chickering, George H.	100	Parker, H. D.	500
Cummings, John	500	Simmons, G. W.	50
Greenleaf, R. C.	1000		
			<hr/>
			\$15,600

The total amount of these gifts for immediate use is \$157,099.68, as is also stated on page 14 of this report.

OTHER GIFTS.

From John Hargreaves, Esquire, of Liverpool, a picture by "Old Crome" framed in oak from a tree associated with the English ancestors of the Boston Mathers.

From the committee of arrangements for the Greek play, a grand piano.

From the executors of Charles Sumner a deed of an undivided half interest in one hundred and sixty acres of land in Wisconsin, having at present no market value.

During the year the College became entitled, under the will of the late George B. Dorr, of Boston, to property exceeding one hundred thousand dollars in value, bequeathed "for the benefit of the general funds of said College," without any restriction whatever; but as no part of this property came into the actual possession of the College until after the close of the financial year, the formal acknowledgment therefor will be made in the next Annual Report.

EDWARD W. HOOPER,

Treasurer.

BOSTON, Dec. 26, 1882.

ACCOUNTS.

1881-82.

*General Statement of Receipts and Disbursements
for the year ending*

INCOME.

Interest on notes, mortgages, and advances,	\$55,879.49	
“ “ Massachusetts 5% Bonds,	2,753.54	
“ “ Policy Mass. Hospital Life Insurance Co.,	200.00	
“ “ New Boston Coal Mining Co. Bond,	700.00	
“ “ Railroad Bonds (after deductions for sinking premiums).		
Atchison, Topeka, & St. Fe, 7%,	\$12,612.27	
Buffalo, Bradford & Pittsburg,	4,200.00	
Burlington & Mo. River in Iowa, 7%,	3,229.29	
“ “ “ in Nebraska, 6%,	14,845.01	
Chicago, Burlington & Quincy, 4%,	17.64	
Marion & McPherson. 1st Mortg., 7%,	77.78	
Ionia & Lansing, 1st Mortg., 8%,	8,736.84	
Marq., Hough. & Onton., 6%,	478.67	
Kan. City, St. Joseph & Council Bluffs, 7%,	3,000.00	
Kansas City, Topeka, & Western, 7%,	4,900.78	
Michigan Southern & Northern Indiana,	70.00	
Nebraska, 7%,	4,988.88	
New York Central, 6%,	1,680.00	
Lincoln & No. Western, 7%,	3,250.23	
	<hr/>	62,087.39
“ “ Municipal Bonds.		
Cincinnati,	140.00	
Minneapolis,	160.00	
	<hr/>	300.00
Dividends on Stocks.		
Charles River National Bank,	480.00	
First (Cambridge) “ “	400.00	
Fitchburg “ “	192.00	
Massachusetts “ “	144.00	
Merchants “ “	1,584.00	
New England “ “	222.00	
Old Boston “ “	500.00	
Schenectady “ “ (N. Y.),	200.00	
Bank taxes refunded,	1,026.07	
	<hr/>	4,748.07
Amoskeag Manufacturing Co.,	1,920.00	
Amory “ “	216.00	
Massachusetts “ “	560.00	
Merrimack “ “	1,700.00	
Nashua “ “	1,440.00	
Pacific Mills “ “	1,000.00	
Stark Mills “ “	1,080.00	
Wamsutta “ “	640.00	
New Bedford Copper “	15.00	
	<hr/>	8,571.00
Chicago, Burlington & Quincy R. R.,	2,980.00	
Pittsfield & North Adams Railroad,	315.00	
Quincy Railroad Bridge Company,	100.00	
Pittsburg, Ft. Wayne, & Chicago R. R.,	350.00	
	<hr/>	3,745.00
Amount carried forward,	\$138,984.49	

*by the Treasurer of Harvard College,
August 31, 1882.*

EXPENSES.

Paid to account of Expenses in the

University, as per Table I. (page 32), \$30,644.41

College, " " II. (page 34).

Salaries for instruction,	\$137,059.27	
Repairs,	4,743.93	
Insurance on College Edifices, not valued on		
Treasurer's books,	10.76	
General Expenses,	39,269.63	
Scholarships,	25,473.31	
Beneficiaries,	3,236.83	
Prizes for Reading, &c.,	1,309.81	
Botanic Garden,	5,468.03	
Herbarium,	1,138.64	
Gymnasium,	6,272.02	
	<hr/>	223,982.23

Library, as per Table III. (page 39).

Books,	10,650.71	
Salaries and other expenses,	20,137.21	
	<hr/>	30,787.92

Divinity School, as per Table IV. (page 40).

Salaries and other expenses,	19,677.29	
Scholarships and Beneficiaries,	1,083.33	
	<hr/>	20,760.62

Law School, as per Table V. (page 42), 41,036.79

Medical School, as per Table VI. (page 43), 131,375.30

Dental School, as per Table VII. (page 44), 3,665.41

Lawrence Scientific School, as per Table VIII. (page 45).

Salaries and other expenses,	20,735.39	
Museum of Comparative Zoölogy,	22,181.46	
	<hr/>	42,917.35

Observatory, as per Table IX. (page 46), 16,861.34

Bussey Institution,	{ as per Table X. (page 46), }	5,120.71	
Bussey Building Fund,		6,509.10	
Arnold Arboretum,		801.72	
		<hr/>	12,431.53

Amount carried forward \$554,462.90

*General Statement of Receipts and Disbursements
for the year ending*

INCOME.

	Amount brought forward, . .	\$138,984.49
Real Estate, from rents, &c. (gross receipts).		
Cambridge (Houses and Lands),	36,465.56	
Boston (general investments),	72,878.11	
Bussey stores,	33,518.97	
Sundry estates,	7,720.17	
	<hr/>	150,582.81
Term Bills.		
College, as per Table II.,	162,983.04	
Divinity School, as per Table IV.,	2,949.12	
Law School, as per Table V.,	22,550.00	
Medical School, as per Table VI.,	51,415.54	
Dental School, as per Table VII.,	4,000.00	
Lawrence Scientific School, as per Table VIII., . .	4,985.00	
Bussey Institution, as per Table X.,	410.00	
	<hr/>	249,292.70
Sundries.		
From Wm. Pennoyer Annuity,	277.50	
Trustees of Thayer Scholarships,	3,600.00	
" Count Rumford's Legacy,	579.37	
" Edward Hopkins,	235.19	
Pew rents in Appleton Chapel,	174.00	
For use of Library by resident graduates and others,	200.00	
Degree of S.D.,	60.00	
Final dividend from Manchester Print Works, . .	2.40	
Degree of Bachelor of Arts out of course, and Ex-		
amination fees,	632.50	
Fees in Infirmary and Laboratory, Dental School, .	741.07	
Printing by College Press for other Departments, .	955.25	
Sales of grass and old material,	224.20	
Sales of old examination papers,	102.55	
Sale of time signals from Observatory,	2,850.00	
Sale of tickets to Commencement Dinner of 1882, .	509.00	
Sale of books, pamphlets, catalogues, &c.,	205.56	
Divinity School balance of appropriation for books		
repaid,	124.37	
Use of lockers at Gymnasium,	1,304.00	
Returned by Beneficiaries,	832.35	
Fee for instruction in Chinese,	3.00	
Fees for use of Gymnasium,	20.00	
Repayment of advances for books from Subscription		
of 1880,	59.61	
Proportion of expenses of Bursar's office repaid by		
other Departments,	438.02	
Proportion of expenses of Gymnasium repaid by other		
Departments,	973.84	
	<hr/>	15,103.78
Sundry gifts for immediate use, see page 9,		157,099.68
		<hr/>
	Amount carried forward, . . .	\$711,063.46

*by the Treasurer of Harvard College,
August 31, 1882.*

EXPENSES.

Amount brought forward, \$554,462.90

Real Estate, expenses.

Insurance.

Cambridge,	\$15.00	
Boston,	1,015.00	
Bussey stores,	1,039.73	
	<hr/>	2,069.73

Taxes.

Cambridge,	1,993.73	
Boston,	11,452.21	
Bussey stores, &c.,	7,019.09	
	<hr/>	20,465.03

Interest.

Cambridge (on advances),	420.00	
Bussey stores (on advances),	2,028.31	
	<hr/>	2,448.31

Repairs, improvements, care, cleaning and sundries.

Cambridge,	10,063.02	
Boston,	7,095.71	
Bussey stores,	5,518.78	
	<hr/>	22,677.51

Heating and hoisting for Bussey stores,	4,012.94	
Less for sales of heat and power,	2,270.00	
	<hr/>	1,742.94

49,403.52

Annuities.

Bussey,	6,800.00	
Gore,	900.00	
Mary Osgood,	360.00	
Lucy Osgood,	780.00	
Class of 1802,	120.00	
Anonymous,	720.00	
Bemis,	2,752.50	
	<hr/>	12,432.50

Sundry payments from income.

To the Treasurer of the Museum of Fine Arts, from Gray Fund for Engravings,	650.00	
For freight on engravings from income of Gray Fund for Engravings,	3.28	
The income of the Daniel Williams Fund for the benefit of the Herring Pond and Mashpee Indians,	948.94	
The income of the Sarah Winslow Fund, to the Minister and Teacher at Tyngsboro', Mass.,	252.88	
Expenses on account of Chinese Instruction,	4,082.81	
For lectures on Political Economy,	300.00	
	<hr/>	6,237.91

Amount carried forward, \$622,536.83

*General Statement of Receipts and Disbursements
for the year ending*

RECEIPTS EXCLUSIVE OF INCOME.

Amount brought forward, \$711,063.46

GIFTS.

Edward Russell Scholarship (additional),	125.00
George and Martha Derby Scholarship,	5,000.00
Lowell Fund for a Botanic Garden,	20,000.00
“ Book Fund,	20,000.00
Charles Sumner Book Fund (additional),	17.20
New Professorship of Law,	90,000.00
Subscriptions to Law School Book Fund,	25,230.00
“ for endowment of Botanic Garden,	2,000.00
“ “ “ “ Physical Laboratory,	22,000.00
“ “ “ “ Divinity School,	1,621.67
“ “ “ “ Dental School,	510.00
	<hr/> 186,503.87

SALES.

\$70,000 Massachusetts 5% Bonds,	81,275.00
100,000 Nebraska R. R. 7% “ (guaranteed)	118,500.00
76,000 Burl. & Mo. Riv. (Iowa) R. R. L. G. 7% Bonds,	89,680.00
8,000 “ “ “ “ (Neb.) “ 6% called bds., paid off,	8,000.00
41,000 Atch., Topeka, & St. Fe R. R. 7% Bonds,	48,387.50
5,000 Chicago, Burl. & Quincy R. R. 4% Bonds,	4,175.00
10 rights to Chicago, Burl. & Quincy R. R. stock,	157.75
	<hr/> 350,175.25

SUNDRIES.

From Dining Hall Association, to reduce debt,	1,000.00
Insurance for fire in Milk St. store,	101.50
Dental School for Dr. Silva's subscription last year,	5.00
	<hr/> 1,106.50
Advances to premiums on railroad bonds repaid,	
from \$334,000 seven per cent bonds, :	3,340.00
Advances to accrued interest on bonds repaid,	5,622.19
“ “ College Wharf repaid,	411.88

Balance, September 1, 1881.

Cash in Suffolk National Bank,	19,063.38
Cash in hands of Allen Danforth, Bursar,	1,131.61
Term Bills due October, 1880,	71,163.80
“ “ over due,	2,259.56
	<hr/> 93,618.35
	<hr/> \$1,351,841.50

by the Treasurer of Harvard College,
August 31, 1882.

EXPENSES.

Total of expenses brought forward, \$622,536.83

INVESTMENTS AND SUNDRY PAYMENTS.

Burl. & Mo. River (Iowa) R. R. L. G. 7%,	\$4,000 cost,	\$4,660.00	
" " " (Neb.) " 6% Bonds,	20,000 "	20,761.25	
Atch., Top. & St. Fe R. R. 7% 1st mort. Bds.	20,000 "	23,800.00	
Ionia & Lansing " 8% " " "	18,000 "	20,335.00	
Kan. City, Top. & W. " 7% " " "	40,000 "	48,065.00	
Marion & McPherson " 7% " " "	150,000 "	169,050.00	
Marq., Hough. & Ont. " 6% " " "	23,000 "	23,942.50	
Linc. & No. Western " 7% " " "	22,000 "	25,750.00	
Mass. 5% Bonds, 1894 (Paine Fund),	1,500 "	1,755.00	
Chicago, Burl. & Quincy R. R. 4% Bonds }	5,000 "	4,175.00	
50 shares Chic., Burl. & Quincy R. R. Co. }	" "	825.00	
500 " " " " " "	" "	64,894.46	
91 " " " " " " new	" "	9,100.00	
		<hr/>	417,113.21
Paid for accrued interest on above bonds,			5,519.31
Invested in Notes and Mortgages,		1,400,000.00	
Less Notes and Mortgages paid off,		1,186,527.68	
		<hr/>	213,472.32
Paid Baring Brothers & Co. in account,		10,708.89	
Less drafts on Baring Brothers & Co.,		10,347.22	
		<hr/>	361.67
Paid on account of improvements to Gray Estate,			450.00
" " " " " " Gore Hall,			483.05
" " " " " " Sever "			465.31
" " " " fire in Milk St. store,			101.50
" " " " advances to Geological Dept.			.25
" " " " Mr. Agassiz's note from income of Memorial Fd.,			4,652.06

Balance, August 31, 1882.

Cash in Suffolk National Bank,	9,211.25
Cash in hands of Allen Danforth, Bursar,	5,090.99
Term Bills due October, 1882,	70,016.74
" " overdue,	2,367.01
	<hr/>
	86,685.99
	<hr/>
	\$1,351,841.50

*The following Account exhibits the State of the Property, as
embraced in the Treasurer's Books, August 31, 1882.*

Notes and Mortgages.

Mortgages	\$446,603.74	
Long Wharf Co.'s Notes	60,000.00	
Chic., Burl'n & Quincy R. R. Notes	100,000.00	
Manufacturing Co.'s Notes	260,000.00	
Personal Notes for Agassiz Memorial Fund	25,006.69	
Personal Note for new professorship in Law School	90,000.00	
		\$981,610.43

Massachusetts 5% Bonds,	\$22,500 valued at	25,805.00
New Boston Coal Mining Co. Bonds,	10,000 " "	9,000.00

Municipal Bonds.

Cincinnati,	2,000.00 valued at	2,000.00
Minneapolis,	2,000.00 " "	2,000.00
		4,000.00

Railroad Bonds.

Burl. & Mo. R. in Nebr. non ex. 6%, 259,000 val'd at	264,173.50	
Kan. City, St. Jos. & C. B. 1st M., 7%, 50,000 " "	50,000.00	
Lincoln & No. West., 1st M., 7%, 57,000 " "	57,000.00	
Atch., Top., & St. Fé, 1st M., 7%, 185,000 " "	185,000.00	
Kan. City, Top., & West., 1st M. 7%, 104,000 " "	104,000.00	
Marion & McPherson, 1st M., 7%, 150,000 " "	150,000.00	
Ionia & Lansing, 1st Mortg., 8%, 121,000 " "	117,617.50	
New York Central, 6%,	28,000 " "	27,000.00
Marqu., Hough. & Onton., 6%, 23,000 " "	23,942.50	
Buffalo, Bradford, and Pittsb., 7%, 60,000 " "	60,000.00	
Michigan So. and No. Indiana, 7%, 1,000 " "	1,000.00	
Railroad Bond Premiums,	79,152.35	
		1,118,885.85

Railroad Stock.

Chicago, Burlington, and Quincy, 1,001 shares,	99,261.93	
Pittsburgh, Fort Wayne and Chicago, 50 "	5,000.00	
Pittsfield and North Adams,	63 " "	6,300.00
Quincy R. R. Bridge Co.,	10 " "	1,250.00
		111,811.93

Manufacturing Stock.

Amory,	36 shares,	3,600.00
Amoskeag,	12 " "	10,800.00
Massachusetts Mills,	7 " "	6,600.00
Merrimack,	17 shares,	17,000.00
Nashua,	36 " "	25,560.00
New Bedford Copper Co.,	5 " "	250.00
Pacific Mills,	20 " "	17,468.29
Stark Mills,	12 " "	11,900.00
Wamsutta Mills,	80 " "	8,880.00
		102,058.29

Amount carried forward, \$2,353,171.50

Amount brought forward, \$2,353,171.50

Bank Stock.

Charles River,	60 shares,	6,000.00
First Cambridge,	50 "	5,000.00
Fitchburg,	24 "	2,403.00
Massachusetts,	12 "	3,000.00
Merchants,	264 "	34,732.00
New England,	37 "	3,896.00
Old Boston,	200 "	8,933.00
Schenectady (N. Y.),	40 "	2,200.00

66,164.00

Real Estate.

Houses and Lands in Cambridge yielding income,	357,163.83
Unimproved Lands in Cambridge,	75,487.79
Bussey Real Estate in Boston and Dedham, . . .	413,092.80
Amory Estate, Franklin Street, Boston, . . .	165,615.81
Webb Estate, Washington Street, Boston, . . .	164,604.79
Andrews Estate, Washington Street, Boston, . .	165,562.00
Gray Estate, Washington Street, Boston, . . .	475,450.00
Estate on Hawley Street, Boston,	38,650.78
Estate on Hawkins Street, "	29,476.09
Ward's (Bumkin) Island, Boston Harbor, . . .	1,200.00
Reversion of Buildings on Brattle Street, Boston,	1,000.00

1,887,303.89

Sundries.

In hands of Count Rumford's Trustees in Paris,	10,000.00
Annuity of William Pennoyer, valued at . . .	4,444.44
Policy of the Mass. Hospital Life Insurance Co.,	5,000.00
Due from Dining Hall Association,	36,232.16
" " Lawrence Scientific School,	4,707.27
" " Bussey Trust,	40,566.13
" " Dental School,	14,488.37
Advances to Scudder's Catalogue,	208.86
" " Books,	29.36
Balance of account for decorating Appleton Chapel,	2,859.62
Term bills due October, 1882,	70,016.74
" " overdue,	2,367.01

190,919.96

Cash in Suffolk National Bank, 9,211.25

" " hands of Allen Danforth, Bursar, 5,090.99 14,302.24

Total \$4,511,861.59

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

UNIVERSITY FUNDS.

Principal, Sept. 1, 1881.		Principal, Aug. 31, 1882.
\$99,700.89	Stock Account (so called),	\$84,962.25
141,638.74	Insurance and Guaranty Fund (so called),	141,638.74
5,250.00	Samuel D. Bradford Fund,	5,250.00
15,750.00	Israel Munson Fund,	15,750.00
16,871.63	Leonard Jarvis Fund,	16,871.63
1,250.44	Peter C. Brooks Fund for building a President's House,	1,242.38
155.35	Thomas Cotton Fund,	155.73
57,596.48	John Parker Fellowships,	57,233.40
10,540.71	Harris Fellowships,	10,865.70
11,947.88	John Thornton Kirkland Fellowship,	12,244.36
9,999.83	James Walker Fellowship,	10,311.83
27,810.78	Rogers Scholarship,	28,773.76
1,598.53	Sumner Prize Fund,	1,688.39
9,000.00	Sever Fund (unrestricted)	9,000.00
21,785.76	Retiring Allowance Fund,	23,010.13
150.00	Robert N. Toppan Prizes	300.00
25,000.00	John C. Gray Fund,	25,000.00
		<hr/> 444,298.30

COLLEGE FUNDS.

27,748.64	Alford Professorship,	27,748.64
28,337.40	Boylston "	28,337.40
21,619.50	Eliot "	21,619.50
10,000.00	" " (Jon. Phillips's gift),	10,000.00
3,500.01	Erving "	3,500.01
35,990.99	Fisher "	35,990.99
20,217.08	Hersey "	20,217.08
17,587.39	" " (Thomas Lee's gift),	18,575.78
3,747.33	Hollis " (Mathematics), . . .	3,747.33
32,609.33	Hollis " (Divinity),	34,441.96
43,062.93	McLean "	43,062.93
21,000.00	Perkins "	21,000.00
25,020.19	Plummer "	25,020.19
52,500.00	Pope "	52,500.00
52,996.37	Rumford "	52,996.37
23,139.83	Smith "	23,139.83
16,240.38	Fund for Permanent Tutors,	16,240.38
125,000.00	Class Subscription Fund,	125,000.00
12,698.04	Daniel H. Peirce "	12,766.91
1,923.63	Paul Dudley Fund for Lectures, . .	2,031.76
31,500.00	Jonathan Phillips Fund (unrestricted)	31,500.00
\$1,062,486.06	. . . . . Amounts carried forward,	\$609,437.06 444,298.30

Principal, Sept. 1, 1881.		Principal, Aug. 31, 1882.	
\$1,062,486.06	Amounts brought forward,	\$609,437.06	444,298.30
1,050.00	John A. Blanchard Fd. (unrestricted)	1,050.00	
3,234.59	John W. P. Abbot " "	3,416.40	
5,600.00	Daniel Austin " "	5,600.00	
345.30	Henry Flynt's Bequest,	346.16	
2,556.40	Abbot Scholarship,	2,550.05	
791.27	Alford "	795.72	
5,100.50	Bartlett "	5,137.18	
5,549.99	Bassett "	5,425.24	
11,840.64	Bigelow "	11,756.10	
94,399.69	Bowditch "	106,332.71	
	Bright " (balance)	570.17	
2,739.17	Browne "	2,743.10	
7,116.47	Class of 1802 Scholarship,	7,146.39	
3,123.80	" 1814 "	3,099.37	
4,980.18	" 1815 " (Kirkland),	5,010.06	
3,738.24	" 1817 "	3,748.32	
2,635.98	" 1835 "	2,634.12	
3,706.61	" 1841 "	3,739.94	
2,838.33	" 1852 " (Dana)	2,997.83	
6,308.86	Crowninshield "	6,663.43	
	Derby " (George & Martha)	5,199.06	
5,350.93	W. S. Eliot "	5,351.66	
2,445.83	Greene "	2,463.30	
6,054.14	Hodges "	6,394.37	
5,998.72	Farrar "	5,985.86	
5,202.44	Levina Hoar "	5,294.79	
4,840.61	Hollis "	4,862.67	
100.71	Matthews " (balance),	530.88	
7,748.78	Morey "	7,684.27	
6,576.85	Pennoyer "	6,594.17	
513.04	Edward Russell "	673.90	
3,845.79	Saltonstall " (Mary & Leverett),	3,861.94	
603.98	" " (Dorothy),	637.92	
5,322.24	Slade "	5,371.34	
3,172.67	Sever "	3,175.99	
9,392.02	Sewall "	9,419.85	
43,099.32	Shattuck "	43,721.48	
2,754.06	Story "	2,758.83	
4,163.24	Gorham Thomas "	4,147.20	
6,497.86	Toppan "	6,563.05	
25,133.05	Townsend "	25,045.52	
3,888.95	Walcott "	3,907.51	
8,191.89	Whiting "	8,652.28	
12,064.95	Exhibitions,	11,899.16	
1,764.40	Palfrey Exhibition,	1,773.54	
1,200.00	Samuel Ward Fund,	1,200.00	
1,006.26	John Glover Fund,	1,062.80	
2,147.04	Rebecca A. Perkins Fund,	2,267.70	
10,923.08	Quincy Tufts Fund,	10,961.35	
5,256.81	Day "	5,292.25	
10,226.59	Munroe "	10,216.31	
\$1,435,628.33	Amounts carried forward,	\$1,003,170.30	444,298.30

Principal, Sept. 1, 1881.		Principal, Aug. 31, 1882.
\$1,435,628.33	. . Amounts brought forward, .	\$1,003,170.30 444,298.30
15,899.06	Lee Prizes for Reading,	15,692.58
4,348.53	Boylston Prizes for Elocution, . .	4,337.94
11,693.03	Bowdoin Prizes for Dissertations, .	11,925.18
1,030.91	Hopkins Gift for "Deturs," . . .	994.23
52,127.57	Botanic Garden Fund,	54,255.77
15,882.31	Lowell Fund for a Botanic Garden, .	35,882.31
18,192.57	Herbarium Fund,	18,100.42
125.00	Salary account (unexpended balance),	125.00
7,413.46	Physical Laboratory,	29,956.58
		<hr/> 1,174,440.31

LIBRARY FUNDS.

10,965.37	Subscription for Library,	11,287.47
2,100.50	Bowditch Fund,	2,140.40
1,516.34	Bright "	2,620.11
5,574.63	Denny "	5,701.33
5,296.52	Farrar "	5,303.00
3,343.83	Haven "	3,515.70
5,563.56	Hayward "	5,755.36
2,414.81	Hollis "	2,458.71
2,105.21	Homer "	2,079.52
5,681.55	Lane "	5,797.68
	Lowell "	20,469.98
61,044.49	Minot "	61,232.01
5,307.31	Salisbury "	5,188.81
20,239.27	Sever "	20,538.32
4,247.32	Shapleigh "	4,455.24
38,264.15	Sumner "	38,310.43
5,031.18	Tucker "	5,018.29
5,708.75	Ward "	6,014.71
124.67	Wales "	178.59
16,292.28	Walker "	16,489.87
94.16	Sundry gifts, etc. (unexpended balances),	158.06
		<hr/> 224,713.59

LAW SCHOOL FUNDS.

8,062.09	Law School (balance),	8,426.35
15,750.00	Dane Professorship,	15,750.00
23,979.82	Bussey "	23,979.82
8,340.81	Royall "	8,340.81
	New "	90,000.00
	Law School Book Fund,	25,230.00
	" " Building Fund,	125,139.80
		<hr/> 296,866.78

MEDICAL SCHOOL FUNDS.

59,469.01	Medical School (balance),	67,312.93
19,192.65	Jackson Medical Fund,	19,192.65
17,129.20	Geo. C. Shattuck Fund,	17,129.20
11,497.76	Warren Fund for Anatom'l Museum,	12,031.53
3,916.51	Boylston Fund for Medical Prizes,	3,787.65
2,159.08	" " " " Books,	2,280.42
2,489.91	Medical Library Fund,	2,624.85
161,771.40	Medical School Building Fund, . .	101,420.32
2,000.00	Quincy Tufts Medical Fund, . . .	2,000.00
765.06	Edward M. Barringer Fund, . . .	808.05
		<hr/> 228,587.60
\$2,099,779.97	. . . . . Amounts carried forward,	\$2,368,906.58

Principal,
Sept. 1, 1881.

Principal, Aug. 31, 1882.

\$2,099,779.97 Amounts brought forward, \$2,368,906.58

DIVINITY SCHOOL FUNDS.

20,666.76	General Fund,	23,486.17
37,583.74	Bussey Professorship,	37,583.74
16,015.81	Parkman "	16,015.81
6,008.43	Hancock "	6,008.43
43,845.73	Winn Prof. of Ecclesiastical History,	44,345.73
20,280.38	Dexter Lectureship,	20,280.38
9,184.69	Henry Lienow Fund,	9,184.69
5,250.00	Mary P. Townsend Fund,	5,250.00
2,100.00	Winthrop Ward Fund,	2,100.00
1,050.00	Samuel Hoar "	1,050.00
1,050.00	Abraham W. Fuller Fund,	1,050.00
1,050.00	Caroline Merriam "	1,050.00
12,925.74	Jackson Foundation,	13,012.18
2,177.95	Joshua Clapp Fund,	2,177.95
1,050.00	William Pomeroy Fund,	1,050.00
525.00	Hannah C. Andrews Fund,	525.00
3,149.62	J. Henry Kendall Scholarship,	3,326.65
2,832.54	Nancy Kendall "	2,898.42
911.34	Lewis Gould Fund	911.34
747.50	Adams Ayer "	789.54
7,875.00	Joseph Baker "	7,875.00
5,304.07	Thomas Cary Scholarships,	5,252.15
2,196.50	George Chapman Scholarship,	2,319.97
2,993.09	Joshua Clapp "	3,161.30
1,586.61	Beneficiary money returned	1,675.80
40,000.00	Th. Tileston of New York Endowm't	40,000.00
10,000.00	Henry P. Kidder Fund,	10,000.00
1,000.00	Abby Crocker Richmond Fund,	1,000.00
66,913.69	New Endowment,	68,535.36
17,000.00	Oliver Ames Fund,	17,000.00
800.00	Daniel Austin Fund,	800.00
10,610.44	Abner W. Buttrick Fund,	11,206.72
		<hr/> 360,922.33

LAWRENCE SCIENTIFIC SCHOOL FUNDS.

38,807.17	Professorship of Engineering,	38,807.17
2,860.50	Professorship of Chemistry,	2,860.50
61,536.43	Abbott Lawrence Fund,	61,536.43
50,375.00	James Lawrence "	50,375.00
30,686.85	John B. Barringer "	30,686.85
100,516.65	Sturgis Hooper "	100,620.00
50,000.00	Gray Fund for Zoölogical Museum,	50,000.00
297,933.10	Agassiz Memorial Fund, }	297,933.10
7,594.01	Teachers' and Pupils' Fund, }	7,594.01
117,469.34	Permanent Fund,	117,469.34
7,740.66	Humboldt Fund,	7,740.66
		<hr/> 765,623.06

\$3,219,984.31 Amounts carried forward, \$3,495,451.97

Principal,
Sept. 1, 1881.

Principal, Aug. 31, 1882.

\$3,219,984.31	Amounts brought forward,	\$3,495,451.97
----------------	--------------------------	----------------

OBSERVATORY FUNDS.

110,293.88	Edward B. Phillips Fund,	110,293.88
21,000.00	James Hayward	21,000.00
21,826.88	David Sears	22,440.22
12,161.96	Josiah Quincy	12,845.46
2,000.00	Charlotte Harris	2,000.00
10,000.00	Anonymous Observatory Fund (at present charged with an Annuity),	10,000.00
6,654.65	Observatory Subscriptions (balance),	5,481.98
		<hr/> 184,061.54

OTHER FUNDS FOR SPECIAL PURPOSES.

413,092.80	Bussey Trust (income thereof, $\frac{1}{2}$ to Bussey Institution, $\frac{1}{4}$ to Law School, and $\frac{1}{4}$ to Divinity School),	413,092.80
50,540.17	Bright Legacy,	50,000.00
24,858.54	Robert Troup Paine Fund,	25,930.13
	Bussey Institution,	805.55
	Dental Subscription Fund,	515.00
3,684.15	Bussey Building Fund,	2,882.43
151,248.31	James Arnold	151,673.32
7,937.76	Arnold Arboretum	9,949.91
42,000.00	James Savage	42,000.00
15,692.86	Gray Fund for Engravings,	15,941.53
20,776.07	Gore Annuity Fund,	20,560.63
7,311.66	Mary Osgood Annuity Fund,	7,362.59
12,909.99	Lucy Osgood Annuity Fund,	12,855.53
51,015.81	Bemis Annuity Fund,	51,073.31
2,394.43	Gospel Church Fund,	2,528.97
3,171.50	John Foster Fund (income to Di- vinity School, Law School, and Medi- cal School, in turn),	3,171.50
465.31	Sever Hall Building Fund,	
1,479.43	Baring Bros. & Co. (balance due them),	1,117.76
		<hr/> 811,460.96

FUNDS IN TRUST FOR PURPOSES NOT
CONNECTED WITH THE COLLEGE.

16,095.39	Daniel Williams Fund for the con- version of the Indians,	16,050.99
4,824.39	Sarah Winslow Fund, for the Minister and Teacher at Tyngsborough, Mass.,	4,836.13
		<hr/> 20,887.12
<hr/> \$4,233,420.25		<hr/> \$4,511,861.59

Changes in the Funds during the year ending August 31, 1882.

Total amount of Funds, August 31, 1882, as before stated,	\$4,511,861.59	
Total amount of Funds, September 1, 1881, as before stated,	4,233,420.25	
Showing a total increase during the year of . . .		<u>\$278,441.34</u>
Which is made up as follows : —		
Gifts forming new Funds or increasing old ones, . .	186,503.87	
Increase of Funds established during the year, and balances created during the year,	127,189.56	
Increase of specially invested Fund by gain from change of investment,	11,275.00	
		<u>324,968.43</u>
Deduct from this amount for		
Stock Account, this year's deficit charged off, being excess of expenditure over income of College, Library, and University accounts,	14,738.64	
Decrease more than increase of Funds and balances, which appear both at the beginning and end of the year,	30,840.09	
Gore Annuity Fund, part of principal spent, . . .	483.05	
Sever Hall Fund, balance " " . . .	465.31	
		<u>46,527.09</u>
		<u>\$278,441.34</u>
<hr/>		
Net increase of Funds, established during the year, as above,	127,189.56	
Increase of specially invested Fund,	11,275.00	
		<u>138,464.56</u>
Less deduction as above,		<u>46,527.09</u>
Leaving amount of the net increase of the Funds and balances, excluding gifts for capital account, as is also shown in the following table,		<u>\$91,937.47</u>

Statement showing Changes in the Different

Increase of Funds which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

Thomas Cotton Fund, . . . . .	.38
Harris Fellowship,	324.99
John Thornton Kirkland Fellowship,	296.48
James Walker Fellowship,	312.00
Rogers Scholarship,	962.98
Sumner Prize Fund,	89.86
Retiring Allowance Fund,	1,224.37
Robert N. Toppan Prizes,	150.00
Hersey Professorship (Thomas Lee's gift),	988.39
Hollis " (Divinity),	1,832.63
Daniel H. Peirce Fund,	68.87
Paul Dudley Fund for Lectures,	108.13
John W. P. Abbott Fund (unrestricted),	181.81
Henry Flynt's Bequest, . . . . .	.86
Alford Scholarship,	4.45
Bartlett "	36.68
Bowditch "	658.02
Browne "	3.93
Class of 1802 Scholarship,	29.92
" 1815 "	29.88
" 1817 "	10.08
" 1841 "	33.33
" 1852 "	159.50
Crowninshield "	354.57
W. S. Eliot " . . . . .	.73
Greene "	17.47
Hodges "	340.23
Levina Hoar "	92.35
Hollis "	22.06
Matthews "	430.17
Pennoyer "	17.32
Edward Russell "	35.86
Saltonstall " (Dorothy),	33.94
" " (Mary & Leverett),	16.15
Slade "	49.10
Sever "	3.32
Sewall "	27.83
Shattuck "	622.16
Story "	4.77
Toppan "	65.19
Walcott "	18.56
Whiting "	460.39
Palfrey Exhibition,	9.14

Amount carried forward, \$10,128.85

Funds during the year ending August 31, 1882.

Decrease of Funds, which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

Peter C. Brooks Fund,	\$8.06	
John Parker Fellowships,	363.08	
Abbot Scholarship,	6.35	
Bassett "	124.75	
Bigelow "	84.54	
Class of 1814 Scholarship,	24.43	
" 1835 "	1.86	
Farrar "	12.86	
Morey "	64.51	
Gorham Thomas "	16.04	
Townsend "	87.53	
Exhibitions,	165.79	
Munroe Fund,	10.28	
Lee Prizes for Reading,	206.48	
Boylston Prizes for Elocution,	10.59	
Hopkins Gift for "Deturs,"	36.68	
Herbarium Fund,	92.15	
Homer Book "	25.69	
Salisbury " "	118.50	
Tucker " "	12.89	
Boylston Fund for Medical Prizes,	128.86	
Medical School Building Fund,	60,351.08	
Thomas Cary Scholarships,	51.92	
Observatory Subscriptions (balance),	1,172.67	
Bright Legacy,	540.17	
Bussey Building Fund,	801.72	
Lucy Osgood Annuity Fund,	54.46	
Baring Bros. & Co.,	361.67	
Daniel Williams Fund,	44.40	
	<hr/>	64,980.01
Decrease of Stock Acc't, by amount of this year's deficit charged off,	14,738.64	
Gore Annuity Fund, spent in improving Gore Hall, out of principal,	483.05	
Sever Hall Fund, balance of account spent on building,	465.31	

Amount carried forward,

\$80,667.01

Statement showing Changes in the Different

Amount brought forward, . \$10,128.85	
John Glover Fund,	56.54
Rebecca A. Perkins Fund,	120.66
Quincy Tufts Fund,	38.27
Day Fund,	35.44
Bowdoin Prizes for Dissertations,	232.15
Botanic Garden Fund,	128.20
Physical Laboratory Fund,	543.12
Subscription for Library,	322.10
Bowditch Book Fund,	39.90
Bright " "	1,103.77
Denny " "	126.70
Farrar " "	6.48
Haven " "	171.87
Hayward " "	191.80
Hollis " "	43.90
Lane " "	116.13
Minot " "	187.52
Sever " "	299.05
Shapleigh " "	207.92
Sumner " "	29.08
Ward " "	305.96
Wales " "	53.92
Walker " "	197.59
Sundry gifts for Books (unexpended balances),	63.90
Law School (balance),	364.26
Medical School (balance),	7,843.92
Warren Fund for Anatomical Museum,	533.77
Boylston Fund for Medical Books,	121.34
Medical Library Fund,	134.94
Edward M. Barringer Fund,	42.99
Divinity School (general fund),	2,819.41
Winn Professorship of Ecclesiastical History,	500.00
Jackson Foundation,	86.44
J. H. Kendall Scholarship,	177.03
Nancy " "	65.88
Adams Ayer Fund,	42.04
George Chapman " "	123.47
Joshua Clapp " "	168.21
Divinity School Beneficiary money returned,	89.19
Abner W. Buttrick Fund,	596.28
Sturgis Hooper " "	103.35
David Sears " "	613.34
Josiah Quincy " "	683.50
Robert Troup Paine " "	1,071.59
James Arnold " "	425.01
Arnold Arboretum " "	2,012.15

Amount carried forward, \$33,368.93

Funds during the year ending August 31, 1882. (Continued.)

Amount brought forward, \$80,667.01

Amount carried forward, \$80,667.01

Statement showing Changes in the Different

Amount brought forward, \$33,368.93		
Gray Fund for Engravings,	248.67	
Gore Annuity Fund,	267.61	
Mary Osgood " "	50.93	
Bemis " "	57.50	
Gospel Church " "	134.54	
Sarah Winslow " "	11.74	
	<hr/>	34,139.92
Increase of Funds established during the year.		
Lowell Book Fund,	469.98	
George and Martha Derby Scholarship,	199.06	
	<hr/>	669.04
Credit balances created,		
Law School Building Fund,	125,139.80	
Bussey Institution,	805.55	
Bright Scholarships,	570.17	
Gift for endowment of Dental School, treated last		
year as income, now transferred to principal,	5.00	
	<hr/>	126,520.52
Bowditch Scholarships, gain from change of special investment,		11,275.00

Total, \$172,604.48

Funds during the year ending August 31, 1882. (Continued.)

Amount brought forward, \$80,667.01

Balance, which is the net increase of the Funds for the year ending August 31, 1882, apart from gifts for capital account,	91,937.47
Total,	<u>\$172,604.48</u>

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every fund, in case that sum be either less or more than the actual income of the fund. If the object to which the income of a fund is to be applied be a general one, — like salaries, for example, — no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 50.

TABLE NO. I.
THE UNIVERSITY.
RECEIPTS.

Income of the unappropriated fund heretofore called the	
Stock Account,	\$5,603.20
Income of the following funds : —	
Insurance and Guaranty,	7,960.11
Israel Munson,	885.15
Leonard Jarvis,	948.21
Samuel D. Bradford,	295.05
Peter C. Brooks,	70.25
Thomas Cotton,	8.26
Parker Fellowship,	3,236.92
John Thornton Kirkland Fellowship,	671.48
Harris Fellowship,	592.40
James Walker Fellowship,	562.00
Rogers Scholarship,	1,562.98
Sumner Prize,	89.86
Sever,	505.80
Retiring Allowance,	1,224.37
John C. Gray,	1,405.00
	<hr/>
	25,621.04
For the degree of S.D.	60.00
For care of the Sarah Winslow Fund,	6.49
Balance remaining after dividing the net income among the Funds,	208.97
Sale of Quinquennial Catalogues,	8.00
From other Departments for proportion of expenses of Bursar's office,	438.02
From Robert N. Toppan, additional gift for prize on Political	
Science,	150.00
	<hr/>
	<u>\$26,492.52</u>

PAYMENTS.

Overseers' Expenses.	
Advertising,	\$220.90
Printing President's Annual Report,	458.25
Printing Treasurer's " "	118.69
Printing other reports, auditing Treasurer's ac-	
counts, &c.,	184.78
	<hr/>
Amount carried forward,	\$982.62

TABLE I., CONTINUED.

PAYMENTS.

	Amount brought forward,	\$982.62	
Office Expenses.			
President's	124.69		
Treasurer's	337.32		
Bursar's	616.37		
Supt. of Buildings,	24.60		
Corporation Rooms (fuel, rent, &c.),	1,701.56		
			2,804.54
Salaries.			
President,	\$5,007.88		
Treasurer,	4,000.00		
Secretary of the Board of Overseers,	100.00		
Bursar,	3,000.00		
Bursar's Assistant,	834.44		
Secretary at Cambridge,	600.00		
For keeping Treasurer's books and copying records and other papers,	2,800.00		
Superintendent of Buildings,	1,531.14		
			17,873.46
Fellowships.			
John Parker,	3,600.00		
Harris,	267.41		
John Thornton Kirkland,	375.00		
Rogers Scholarship,	600.00		
James Walker,	250.00		
			5,092.41
Memorial Hall and Sanders Theatre.			
Repairs, fuel, gas, &c.,			1,554.42
Sundries.			
Advertising,	37.05		
Labor, &c. on grounds outside of College Yard,	269.60		
Repairs and improvements on the President's house,	78.31		
Furniture,	701.30		
Subscription to Mercantile Agency,	125.00		
Watering streets,	205.00		
Watchmen,	500.63		
Examinations at New York, Cincinnati, and Exeter,	124.60		
Rent of Hall in Boston for lectures on Pedagogy,	36.00		
Editing list of University publications,	66.90		
Fire Apparatus,	48.00		
Freight, legal services, diplomas, &c.,	144.57		
			2,336.96
			\$30,644.41

TABLE No. II.
THE COLLEGE.
RECEIPTS.

From Term Bills.

Instruction,	\$128,656.66	
Rents available for general expenses,	33,873.88	
Diplomas,	452.50	
		<hr/> 162,983.04

Income of Scholarship Funds.

Abbot,	\$143.65	
Alford,	44.45	
Bartlett,	286.68	
Bassett. Interest,	\$58.56	
From special investment,	275.00	333.56
Bigelow,		665.46
Bowditch. Interest,	\$4,226.07	
From special investment,	1,681.95	5,908.02
Bright, $\frac{1}{2}$ income of Bright Legacy,		1,405.00
Browne,		153.93
Class of 1802,		399.92
“ 1814,		175.57
“ 1815 (Kirkland),		279.88
“ 1817,		210.08
“ 1835,		148.14
“ 1841,		208.33
“ 1852 (Dana) (accumulating),		159.50
Crowninshield (accumulating),		354.57
Derby, George and Martha,		199.06
Wm. Samuel Eliot,		300.73
Farrar,		337.14
Greene,		137.47
Levina Hoar (Town of Lincoln),		292.35
Hodges (accumulating),		340.23
Hollis,		272.06
Matthews ($\frac{1}{2}$ of net rents of Hall),		4,930.17
Morey,		435.49
Pennoyer. Interest,	\$119.82	
Annuity,	277.50	397.32
Edward Russell (accumulating),		35.86
Saltonstall, Mary and Leverett,		216.15
Saltonstall, Dorothy (accumulating),		33.94
Savage,		300.00
Sever,		178.32
Sewall,		527.83
Shattuck,		2,422.16
Slade,		299.10
Story,		154.77
Gorham Thomas,		233.96
Toppan,		365.19
Townsend,		1,412.47
Walcott,		218.56
Whiting (accumulating),	460.39	25,377.46
Received from the Trustees of the Thayer Scholarships,		3,600.00
Amount carried forward,		\$191,960.50

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward,		\$191,960.50	
Other Beneficiary Funds, income of.			
"Exhibitions," Interest,		\$678.05	
Returned by beneficiaries, <u>832.35</u>		\$1,510.40	
Palfrey "Exhibition,"		99.14	
Samuel Ward,		50.00	
John Glover (accumulating),		56.54	
Rebecca A. Perkins "		120.66	
Quincy Tufts,		613.87	
Moses Day,		295.44	
Munroe,		574.76	
			3,320.81
Prize Funds, income of.			
Thomas Lee Prizes for Reading,		893.52	
Ward Nicholas Boylston Prizes for Elocution,		244.41	
James Bowdoin Prizes for Dissertations,		657.15	
Edward Hopkins Gift for "Deturs,"		293.13	
			2,088.21
Funds for Instruction.			
Income of the Alford Professorship,		1,559.49	
Boylston "		1,592.54	
Eliot "		1,215.04	
J. Phillips's addition to Eliot Prof.,		500.00	
Erving Professorship,		196.70	
Fisher "		2,022.69	
Hersey "		702.75	
Hollis " (Mathematics),		210.58	
McLean "		2,420.14	
Perkins "		1,180.20	
Plummer "		1,406.12	
Pope "		2,950.50	
Rumford "		2,995.75	
Smith "		1,300.47	
Fund for Permanent Tutors,		912.69	
Thos. Lee Fund for the Hersey Prof.		988.39	
Class Subscription,		7,025.00	
Henry Flynt,		18.44	
Hollis Prof. of Divinity (accumulat'g),		1,832.63	
Paul Dudley Fund for Lectures, "		108.13	
Anonymous gift, to increase salary,		500.00	
			31,638.25
Botanic Garden.			
Income of Fund. Interest,		\$2,027.98	
From special investment, <u>1,020.00</u>		3,047.98	
" " the Lowell Fund,		1,548.25	
Estimated value of use of house by Prof. Gray, <u>1,000.00</u>		5,596.23	
Herbarium. Income of Fund,		1,022.45	
Sale of paper, &c.,		240.4	1,046.49
Amount carried forward,		\$235,650.49	

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward,	\$235,650.49	
Income of Jonathan Phillips's unrestricted Fund,	\$1,770.30	
" " John A. Blanchard's " "	59.01	
" " Daniel H. Pierce Fund,	688.72	
" " J. W. P. Abbot's " (accumulating),	181.81	
" " Fund for Physical Laboratory,	543.12	
		<u>3,242.96</u>
Sundries.		
Pew Rents, Appleton Chapel,	174.00	
For the Degree of Bachelor of Arts out of course, and examination fees,	632.50	
Sales of grass and old material,	126.00	
Sale of old examination papers,	102.55	
For Printing by College Press for other departm'ts,	955.25	
For use of rooms by College officers,	945.00	
Sale of tickets to Commencement Dinner of 1882,	509.00	
For use of lockers at Gymnasium,	1,304.00	
Fees for use of Gymnasium,	20.00	
For use of Gymnasium by other Departments,	973.84	
From R. H. McDonald, for books for French Dpt.	20.00	
		<u>5,762.14</u>
Total receipts,	\$244,655.59	

PAYMENTS.

Paid the incumbents of the following Scholarships.

Abbot,	\$150.00
Alford,	40.00
Bartlett,	250.00
Basset,	458.31
Bigelow,	750.00
Bowditch,	5,250.00
Bright,	1,375.00
Browne,	150.00
Class of 1802,	250.00
" 1814,	200.00
" 1815 (Kirkland),	250.00
" 1817,	200.00
" 1835,	150.00
" 1841,	175.00
Wm. Samuel Eliot,	300.00
Farrar,	350.00
Greene,	120.00
Levina Hoar,	200.00
Hollis,	250.00
Matthews,	4,500.00
Morey,	500.00

Amount carried forward, \$15,868.31

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward, \$15,868.31		
Pennoyer,	380.00	
Saltonstall, Mary and Leverett,	200.00	
Savage,	300.00	
Sever,	175.00	
Sewall,	500.00	
Shattuck,	1,800.00	
Slade,	250.00	
Story,	150.00	
Thayer,	3,600.00	
Gorham Thomas,	250.00	
Toppan,	300.00	
Townsend,	1,500.00	
Walcott,	200.00	
	<hr/>	25,473.31
Paid other Beneficiaries.		
Exhibitions,	1,676.19	
Palfrey Exhibition,	90.00	
Samuel Ward Income,	50.00	
Quincy Tufts " (part of),	575.60	
Day Fund " " "	260.00	
Munroe Fund " " "	585.04	
	<hr/>	3,236.83
Prizes. Lee Prizes for Reading,		
Boylston Prizes for Elocution,	255.00	
Bowdoin Prizes for Dissertations	425.00	
"Deturs" from Hopkins Fund	329.81	
	<hr/>	1,309.81
Salaries for instruction,		137,059.27
Repairs and improvements on College Edifices not valued on Treasurer's books,		4,743.93
Insurance on College Edifices, etc. not valued on Treasurer's books,		10.76
Botanic Garden, for labor, repairs, and materials,		5,468.03
Herbarium, " " "		1,138.64
Gymnasium, Locker money, paid Director,	1,088.00	
Salaries and wages,	2,595.00	
Janitors and cleaning,	807.84	
Gas, water, and sundries,	935.91	
Fuel,	629.62	
Apparatus and fittings,	215.65	
	<hr/>	6,272.02
General Expenses.		
Appropriations for collections and laboratories.		
Physical Apparatus (Prof. Lovering), \$600.00		
Mineral and Chemical (Prof. Cooke), . 800.00		
Rumford (Prof. Gibbs), 650.20		
Botanical (Prof. Farlow), 599.42		
	<hr/>	
Amounts carried forward, \$2,649.62		\$184,712.60

TABLE II., CONTINUED.

PAYMENTS.

Amounts brought forward, \$2,649.62	\$184,712.60
Physiological (Asst. Prof. James),	74.14
Geological (Prof. Shaler),	135.63
Zoölogical (Instructors Faxon and Mark),	161.71
Fine Arts (Prof. Norton),	515.33
Physical (Prof. Trowbridge),	593.44
Drawing (Instructor Moore),	146.57
Greek Department (Prof. Goodwin),	75.70
Rhetoric and English (Prof. Hill)	7.96
	—\$4,360.10
Appleton Chapel. Singing, blowing organ, etc.,	1,624.12
Admission examinations,	1,004.65
Advertising,	15.75
Books and binding,	113.80
Clerk in Chemical Laboratory,	286.90
Cleaning and care of College buildings not valued on Treasurer's books,	8,492.22
College Yard expenses, labor and material, &c.,	2,887.06
Commencement Dinner 1882,	913.26
Dean's and Registrar's Office, clerk, stationery, postage, copying, etc.,	1,681.50
Fuel,	3,615.69
Furniture,	51.77
Freight, diplomas, and sundries,	560.36
Gas,	1,771.01
Mats,	86.80
Music, Class-Day,	125.00
“ Commencement, 1881, 1882,	335.00
Pews hired in Cambridge churches,	927.00
Preaching and morning services,	2,295.00
Printing office, expenses,	3,249.81
Printing,	122.73
Services of examiners and proctors,	2,639.13
“ “ undergraduates,	707.91
Watchman,	973.00
Water rates,	430.06
	—39,269.63
Total payments,	\$223,982.23

TABLE NO. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.

Subscription for Library,	\$616.23
Nathaniel I. Bowditch,	118.08
Bright, $\frac{1}{2}$ income of the Bright Legacy, \$1,405.00	
Interest on balance,	85.20
	1,490.20

Amount carried forward, \$2,224.51

Amount brought forward, \$2,224.51		
Denny,		313.32
Eliza Farrar,		297.69
Horace A. Haven,		187.93
George Hayward,		312.70
Thomas Hollis,		135.72
Sidney Homer,		118.30
Frederick A. Lane,		319.33
Lowell,		655.69
Charles Minot. Interest,	\$58.67	
From special investment,	<u>4,200.00</u>	4,258.67
Stephen Salisbury,		298.25
Sever,		1,137.43
Samuel Shapleigh,		238.68
Charles Sumner,		2,150.77
Ichabod Tucker. From special investment,		200.00
Thomas W. Ward,		320.85
George W. Wales. Gift,	\$200.00	
Interest on unexpended balance,	<u>7.03</u>	207.03
James Walker,		915.61
Gift from Dante Society,		50.00
Subscription of 1880,		59.61
		<u>14,402.09</u>
James Savage Fund for general expenses ($\frac{1}{2}$ of income),		1,030.20
Daniel Austin " " " "		314.72
		<u>1,344.92</u>
William B. Weeden, gift to aid in publ. Lib'y Bulletins,		100.00
Henry Lee, " " " " " " " "		50.00
Alexander Agassiz, " " " " " " " "		50.00
Charles P. Curtis, " " " " " " " "		200.00
Charles S. Sargent, " " " " " " " "		50.00
		<u>450.00</u>
Fees for use of Library,		200.00
Sales of Bulletins and Calendars,		153.00
		<u>353.00</u>
		<u>\$16,550.01</u>

PAYMENTS:

For Books from	
Subscription Fund,	\$294.13
Bowditch "	78.18
Bright "	386.43
Denny "	186.62
Farrar "	291.21
Gray " . . . . .	.70
Haven "	16.06
Hayward "	120.90
Hollis "	91.82
Homer "	143.99
Lane "	203.20
Lowell "	185.71

Amount carried forward, \$1,998.95

TABLE III., CONTINUED.

PAYMENTS.

	Amount brought forward,	\$1,998.95	
Minot	Fund,	4,071.15	
Salisbury	"	416.75	
Sever	"	838.38	
Shapleigh	"	30.76	
Sumner	"	2,121.69	
Tucker	"	212.89	
Ward	"	14.89	
Wales	"	153.11	
Walker	"	718.02	
	Dante Society money,	8.64	
	Duplicate "	2.93	
	Subscription of 1880,	62.55	
			10,650.71
	Salaries and wages,	15,477.70	
	Binding,	1,139.18	
	Stationery and postage,	428.40	
	Fuel,	837.95	
	Repairs and improvements,	374.30	
	Freight, water, and sundries,	169.54	
	Janitors and cleaning,	431.27	
	Furniture,	29.60	
	Insurance on steam boiler,	15.00	
	Bulletins, and other printing,	1,197.12	
	Mats,	37.15	
			20,137.27
			\$30,787.92

TABLE No. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.

	General Fund,	\$1,161.49
	Benjamin Bussey Professorship,	2,112.22
	Parkman Professorship,	900.10
	John Hancock "	337.65
	Winn Professorship of Ecclesiastical History,	2,464.15
	Samuel Dexter ,	1,139.74
	Henry Lienow ,	516.20
	Mary P. Townsend ,	295.05
	Winthrop Ward ,	118.02
	Samuel Hoar ,	59.01
	Abraham W. Fuller ,	59.01
	Caroline Merriam ,	59.01
	Joseph Baker ,	442.58

Amount carried forward, \$9,664.23

TABLE IV., CONTINUED.

RECEIPTS.

Amount brought forward, . . .	\$9,664.23	
Thomas Tileston of New York Endowment, . .	2,248.00	
Oliver Ames,	955.40	
Henry P. Kidder,	562.00	
Abby Crocker Richmond,	56.20	
New Subscription,	3,787.77	17,273.60
<hr/>		
Income of Scholarship Funds.		
Thomas Cary,	298.08	
George Chapman,	123.47	
Joshua Clapp,	168.21	
Jackson Foundation,	726.44	
J. Henry Kendall,	177.03	
Nancy Kendall,	159.21	1,652.44
<hr/>		
Income of other Funds.		
Joshua Clapp,	122.40	
William Pomeroy,	59.01	
Hannah C. Andrews,	29.51	
Lewis Gould,	51.20	
Daniel Austin,	44.96	
Abner W. Buttrick,	596.28	
Adams Ayer,	42.04	
Interest on Beneficiary money returned,	89.19	1,034.59
<hr/>		
Term Bills.		
For Instruction,	1,483.35	
For Rents,	1,465.77	2,949.12
<hr/>		
Balance of appropriation for books repaid,		124.37
Benjamin Bussey Trust. One-fourth of net income for use of this School,		2,342.53
		<hr/>
		\$25,376.65

PAYMENTS.

For Salaries for Instruction,	\$17,900.00
Services of students,	200.00
Labor, repairs, and improvements,	514.53
Cleaning and care of rooms,	575.60
Books and binding,	40.22
Printing,	7.75
Fuel,	6.25
Gas,	104.64
Water rates,	30.00
Diplomas and sundries,	20.85
Collation,	56.25
Advertising,	2.80
Proportion of expenses of Bursar's office,	60.49
“ “ “ “ Gymnasium,	134.48
Stationery and postage,	23.43

Amount carried forward, \$19,677.29

TABLE IV., CONTINUED.

PAYMENTS.

Amount brought forward,	\$19,677.29	
Paid the incumbents of the following Scholarships.		
Jackson Foundation,	\$640.00	
Cary,	350.00	
Nancy Kendall,	93.33	
	<u> </u>	1,083.33
		<u>\$20,760.62</u>

TABLE NO. V.

LAW SCHOOL.

RECEIPTS.

Income of the following funds.

Law School Balance,	\$453.08	
Nathan Dane,	885.15	
Benjamin Bussey Professorship,	1,347.68	
Isaac Royall,	468.76	
New Professorship,	2,250.00	
Law School Book Fund,	480.00	
" " Building "	763.65	
Benjamin Bussey Trust ($\frac{1}{4}$ of net income for use of this School),	<u>2,342.53</u>	8,990.85

Term Bills.

For instruction,	22,550.00	
Anonymous gift for the erection of a new building,	<u>135,000.00</u>	
		<u>\$166,540.85</u>

PAYMENTS.

For Salaries for Instruction,	\$21,225.00	
Librarian and Assistants,	2,650.00	
Janitor and coat-room boy,	761.86	
Books and binding,	2,477.45	
Fuel,	532.90	
Gas,	304.80	
Printing	167.50	
Scholarships,	750.00	
Labor, repairs, and improvements,	235.90	
Stationery and postage,	80.35	
Freight, diplomas, and sundries,	81.57	
Water rates,	61.42	
Furniture,	12.25	
Account of new building,	10,623.85	
Services of examiners and proctors,	56.75	
Proportion of expenses of Bursar's office,	314.95	
" " " " Gymnasium,	<u>700.24</u>	\$41,036.79

TABLE No. VI.
MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.

Medical School, balance,	\$3,342.16	
Jackson Medical,	1,078.65	
Warren, for Anatomical Museum,	646.19	
Ward Nicholas Boylston, for Medical Prizes,	220.14	
Ward Nicholas Boylston, for Medical Books,	121.34	
George C. Shattuck,	962.65	
Hersey Professorship, two-fifths income of the fund,	433.45	
Medical Library Fund,	139.94	
Medical School Building Fund,	5,278.60	
Quincy Tufts,	112.40	
Edward M. Barringer,	42.99	
John Foster, income for Medical students every third year,	178.27	
		12,556.78

From students for instruction,	47,395.90	
“ “ for graduation fees,	2,580.00	
“ “ in Chemical Laboratory, breakage and chemicals,	1,024.64	
“ “ in Practical Anatomy, for material,	415.00	
		51,415.54

Subscriptions to the Building Fund,	15,600.00	
		<u>\$79,572.32</u>

PAYMENTS.

Boylston Medical Prizes. Prizes,	\$300.00	
Advertising,	49.00	349.00

Warren Anatomical Museum.

Expenses, and additions to collection,	112.42	
Chemical Laboratory, apparatus, chemicals, and wages,	1,376.50	
Physiological Laboratory, expenses and wages,	1,008.34	
Practical Anatomy and Surgery Expenses,	1,864.94	
Topographical Anatomy Expenses,	45.00	
Obstetrics Expenses,	321.75	
Histology “	36.51	
Materia Medica “	47.56	
Salaries for instruction,	37,743.44	
Repairs and improvements,	425.38	
Scholarships,	1,300.00	
For account of new building,	81,229.68	
		125,860.52

General Expenses.

Advertising and catalogues,	\$708.58	
Alcohol,	39.75	
Books from Library Fund,	5.00	
Cleaning,	259.13	

Amounts carried forward, \$1,012.46 \$125,860.52

TABLE VI., CONTINUED.

PAYMENTS.

Amounts brought forward, \$1,012.46		\$125,860.52
Clerk,	700.00	
Diplomas,	89.87	
Doorkeeper,	60.00	
Expenses collecting subscriptions,	38.40	
Faculty meetings,	172.35	
Fuel,	344.80	
Gas,	481.00	
Janitor,	1,200.00	
Librarian,	20.00	
Printing,	251.00	
Rent of rooms (in part) for Pathological specimens,	200.00	
Rent and heating of rooms for Chemical Laboratory,	600.00	
Services of Examiners,	15.00	
Stationery, postage, and sundries,	165.64	
Travelling expenses,	70.29	
Water rates,	93.97	5,514.78
		<u>\$131,375.30</u>

TABLE No. VII.
DENTAL SCHOOL.

RECEIPTS.

Income of Subscription Fund,	\$18.71	
From Students,	4,000.00	
Infirmary,	559.07	
Laboratory,	182.00	
Rent of a part of the School building,	245.00	
		<u>\$5,004.78</u>

PAYMENTS.

Advertising and catalogues,	\$114.50	
Care of operating room at hospital, and cleaning,	69.50	
Drugs, chemicals, and sundries,	83.08	
Diplomas,	9.43	
Expenses in Oral Pathology and Anatomy,	75.00	
“ “ Dental Therapeutics,	92.00	
Fuel,	146.15	
Gas,	15.40	
Gold foil and metals,	237.22	
Instruments and apparatus,	401.85	
Interest on debt,	949.96	
Printing,	28.50	
Repairs to building,	145.45	
Salaries of demonstrators,	1,100.00	
Stationery and postage,	72.95	
Taxes,	108.42	
Water rates,	11.00	
To Subscription Fund, Dr. Silva's subscription (entered as a gift for immediate use last year),	5.00	\$3,665.41

TABLE NO. VIII.

LAWRENCE SCIENTIFIC SCHOOL.

RECEIPTS.

Income of the following Funds.

Professorship of Engineering,	\$2,180.95	
Professorship of Chemistry,	160.79	
Abbott Lawrence,	3,458.32	
James Lawrence,	2,831.08	
John B. Barringer. Interest,	\$1,600.97	
From special investment,	200.00	1,800.97
Gray Fund for Zoölogical Museum,	2,810.00	
Sturgis Hooper,	5,620.00	
Agassiz Memorial. Interest,	\$15,077.00	
From special investment,	1,482.94	16,559.94
Teachers and Pupils,	426.78	
Humboldt,	435.04	
Permanent Fund for Museum of Zoölogy,	6,601.76	
		<u>42,885.63</u>
Term Bills, for Instruction,		4,985.00
		<u>\$47,870.63</u>

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.

Gray,	\$2,810.00	
Agassiz Memorial,	11,907.88	
Teachers and Pupils,	426.78	
Humboldt,	435.04	
Permanent,	6,601.76	22,181.46
Salaries for instruction,	17,258.32	
Expenses in Geology,	516.65	
Stationery postage, and sundries,	15.85	
Proctorial services,	26.25	
Books, Engineering Department,	89.30	
Instruments and apparatus,	476.12	
Printing,	43.00	
Fuel,	369.12	
Gas,	19.20	
Janitor and cleaning,	523.00	
Labor and repairs,	232.33	
Expenses Chemical Laboratory (part of),	50.97	
Scholarships,	600.00	
Interest on advances,	294.31	
Water rates,	19.77	
Proportion of expenses of Bursar's office,	62.58	
" " " " Gymnasium,	139.12	
		<u>20,735.89</u>
		<u>\$42,917.35</u>

TABLE No. IX.
OBSERVATORY.

RECEIPTS.

Income of the following Funds.

Observatory, balance,	\$374.01	
Edward B. Phillips,	6,198.52	
James Hayward,	1,180.20	
David Sears,	1,226.68	
Josiah Quincy,	683.50	
James Savage ($\frac{1}{2}$ of net income),	1,030.20	
Charlotte Harris,	112.40	
	<hr/>	10,805.51
Subscriptions, for immediate use,		3,330.00
From sale of time signals,		2,850.00
		<hr/>
		<u>\$16,985.51</u>

PAYMENTS.

Salaries and wages,	\$13,375.53	
Cleaning and care of Observatory,	234.07	
Gas,	71.76	
Instruments and apparatus, including repairs on same,	1,430.00	
Repairs and improvements on buildings and grounds,	882.52	
Stationery, postage, and telegraphing,	240.17	
Fuel,	116.29	
Books and binding,	225.17	
Water rates,	50.00	
Printing,	63.70	
Freight and sundries,	114.68	
Chemicals,	24.95	
Watering streets,	32.50	
	<hr/>	\$16,861.34

TABLE No. X.
BUSSEY INSTITUTION.

RECEIPTS.

From Bussey Trust ($\frac{1}{2}$ net income),	\$4,685.06	
From Bussey Building Fund (net income),	707.04	
Fees for Instruction,	410.00	
Sale of coal to Arboretum,	74.16	
From Arnold Arboretum for rent of greenhouses,	50.00	
	<hr/>	<u>\$5,926.26</u>

PAYMENTS.

For Salaries,	\$4,220.00	
Books,	23.43	
Stationery and postage, cleaning, gas, &c.,	44.56	
Fuel for school building,	8.00	
Wages,	174.50	
Horticultural Department, expenses,	577.73	
Repairs and improvements,	47.49	
Printing,	25.00	
	<hr/>	\$5,120.71

TABLE X., CONTINUED.

Bussey Building Fund.*Receipts.*

Income of unexpended balance of Fund,	\$207.04	
Estimated value of use of house by Prof. Storer, . . .	500.00	
		<u>\$707.04</u>

Payments.

Repairing greenhouses and gardener's house,	\$801.72	
Income carried to Bussey Institution,	707.04	
		<u>1,508.76</u>

James Arnold Fund.*Receipts.*

Income of Fund,	\$8,500.14
---------------------------	------------

Payments.

19/20 of income carried to Arnold Arboretum,	\$8,075.13
--	------------

Arnold Arboretum.*Receipts.*

Income of unexpended balance of Fund,	\$446.12	
From James Arnold Fund,	8,075.13	
		<u>\$8,521.25</u>

Payments.

Salary of Director and Assistant,	\$2,900.00	
Expenses of Arboretum,	3,609.10	
		<u>\$6,509.10</u>

TABLE NO. XI.

MISCELLANEOUS FUNDS.**Bussey Trust.***Receipts.*

Net income from Real Estate,	\$16,170.12
--	-------------

Payments.

Annuities,	\$6,800.00	
One-half of the remaining income to Bussey Institution,	4,685.06	
One-quarter " " " Divinity School,	2,342.53	
" " " " Law School,	2,342.53	
		<u>\$16,170.12</u>

Gray Fund for Engravings.*Receipts.*

Interest on Fund,	\$881.95	
From sale of catalogues,	20.00	
		<u>\$901.95</u>

Payments.

To the Treasurer of the Museum of Fine Arts,	\$650.00	
For freight, &c.,	3.28	
		<u>\$653.28</u>

TABLE XI., CONTINUED.

Sundry Accounts.*Receipts.*

Gain from change of investm't for Bowditch Scholarships,	\$11,275.00	
Chinese Subscriptions paid and fee for instruction, . .	1,502.68	
Advances to books from "General Investments," . . .	29.36	
Bright Scholarship balance transferred,	540.17	
Dr. Silva's subscription to Dental School transferred,	5.00	
	<hr/>	\$13,352.21

Payments.

Gore Annuity Fund, spent in improving Gore Hall, .	\$483.05	
Seyer Hall Fund, balance of account spent on building,	465.31	
Expenses of Chinese Instructor, salary, and travelling expenses,	4,082.81	
Annuity for Class of 1802,	120.00	
Advance to Geological Dept. to be repaid next year, .	.25	
Advances repaid, to		
Agassiz Memorial Fund,	4,652.06	
Dental School,	1,339.37	
Lawrence Scientific School,	197.87	
Chinese Subscription,	374.38	
Baring Bros. & Co.,	361.67	
	<hr/>	12,076.77
<hr/>		
Gospel Church Fund (accumulating). Interest on Fund, . . .	\$134.54	
Robert Troup Paine Fund " From special investment,	1,071.59	

GENERAL SUMMARY OF THE TABLES.

		Receipts.	Payments	
Table	I. University,	26,492.52	30,644.41	
Table	II. College,	244,655.59	223,982.23	
Table	III. Library,	16,550.01	30,787.92	
Table	IV. Divinity School,	25,376.65	20,760.62	
Table	V. Law School,	166,540.85	41,036.79	
Table	VI. Medical School,	79,572.32	131,375.30	
Table	VII. Dental School,	5,004.78	3,665.41	
Table	VIII. Lawrence Scientific School, . . .	47,870.63	42,917.35	
Table	IX. Observatory,	16,985.51	16,861.34	
Table	X. {	Bussey Institution,	5,926.26	5,120.71
		Bussey Building Fund,	707.04	1,508.76
		James Arnold Fund,	8,500.14	8,075.13
		Arnold Arboretum,	8,521.25	6,509.10
		Bussey Trust,	16,170.12	16,170.12
		Gray Fund for Engravings,	901.95	653.28
Table	XI. {	Annuity Funds,	5,834.08	5,512.50
		Daniel Williams Fund,	904.54	948.94
		Sarah Winslow Fund,	271.11	259.37
		James Savage Fund,	2,360.40	2,360.40
		Bright Legacy,	2,810.00	3,350.17
		Sundry Accounts,	13,352.21	12,076.77
		Gospel Church Fund,	134.54	
		Robert Troup Paine Fund,	1,071.59	
		696,514.09	604,576.62	
		604,576.62		
		Balance \$91,937.47		

Which is the net increase of the Funds and balances, excluding gifts for capital account, as also shown on page 25.

Certificate of the Joint Committee of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

We, the undersigned, a joint committee of the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending August 31, 1882, have examined and audited the Cash book from pages 122 to 161, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were received by him and on hand at the beginning of said year, are now in his possession, or are fully accounted for by entries made therein. We have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

We have carefully examined all notes, bonds, mortgages, and other securities invested during the said year, and are of opinion that all such investments have been judiciously made and are amply secured.

We have in like manner satisfied ourselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

The Committee have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

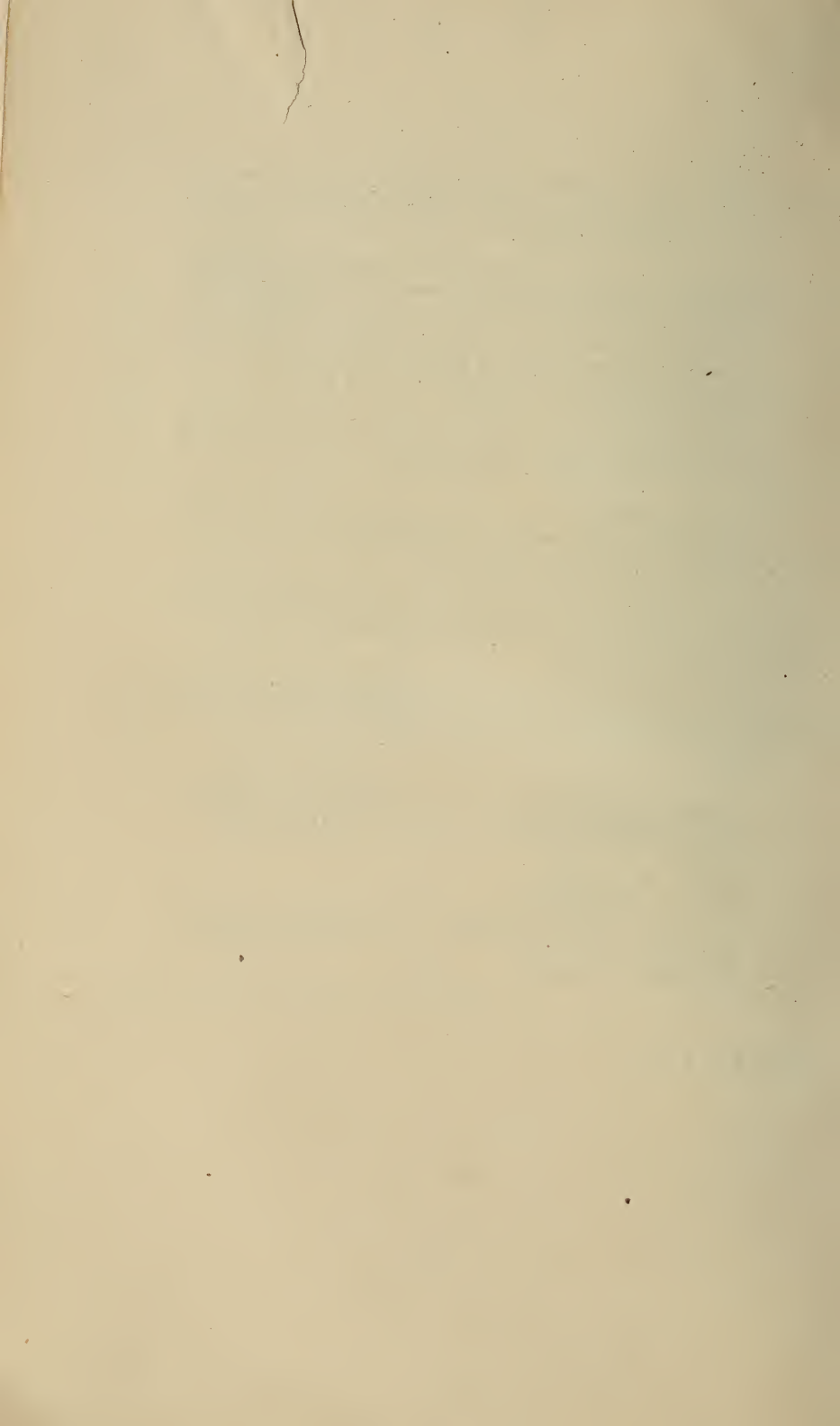
FRANCIS PARKMAN,
JOHN QUINCY ADAMS,

} *Committee on the part of
the Corporation.*

HENRY P. KIDDER,
AMOS A. LAWRENCE,
CHARLES HENRY PARKER,
ISRAEL M. SPELMAN,
SOLOMON LINCOLN,

} *Committee on the part of the
Board of Overseers.*

Boston, Dec. 9, 1882.



UNIVERSITY OF ILLINOIS-URBANA



3 0112 074971323